P. 3 - Embodied Shopping

"Kid Mode"

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Meet the Team

Lukas Marinovic

(aka Sweet)

Frequent grocery shopper who helps encourage roommates to cook, Lukas adds an element of skillful sketches and analytical ways of thinking, all through his great-wit.

Christopher Wolford

(aka Sassy)

Amateur home chef and legitimately enjoys grocery shopping, Christopher brings a writing and marketing approach to the team with a dollop of sarcasm.

Rachel Anderson

(aka Molassy)

Holding the team together, food enthusiast and avid grocery shop avoider, Rachel contributes a fresh marketing and business perspective to the team.

Project Overview

Background

Whether it's to restock the fridge or just to grab a couple items for dinner, people frequently take trips to the grocery store. This is especially true for families. Parents are often left with no options besides taking their younger children to the stores. While grocery stores have tried various techniques to keep little ones engaged – small carts for kids, free cookies, or grocery carts shaped like cars – there are opportunities in which children could be further engaged in the shopping experience.

Goal

Engage children during the shopping experience in a way that encourages parents to bring their kids to the grocery store. By implementing our desired experience, this will result in promoting family engagement during and after the shopping trip.

Scope

Three to six year-old children co-shopping with parents who use the self-checkout system at Pay-Less stores.

Methodology

In order to create our concept, our design approach was fluid. While we initially started with secondary research, we sketched, we interviewed, we created three affinity models, we refined our problem space, we researched some more, we continued to refine the problem space, we sketched, we observed, we sketched again, and then we created a prototype. Finally, we were able to test some potential users in order to evaluate our current prototype and create our final product. Each of the steps we took was guided by our findings from previous steps.

Solution

Our final proposed product is an enhanced self-checkout feature. By creating a family-mode option which leads to creating a "scene" on the screen with the items in the cart in addition to a recipe involving those items, children and families can be engaged while at the grocery store. Finally, this engagement should lead to healthy, lifelong habits.

Seeking an Opportunity

We kicked off our investigation through examination of existing literature. Our initial round of research yielded several opportunities to explore, but one article about family co-shopping piqued our interest by discussing how "even 5-6 year old children most often take on cooperative and constructive positions in family co-shopping" (Gram & Grønhøj, 2016). As a group, we discussed how this challenged our own ideas about the role children play in the grocery shopping experience and wanted to learn more.

In this early phase, we limited our scope to Pay-Less stores only. We collectively agreed that exploring multiple stores would not be feasible given the time constraints and variables between each store (layout, selection, clientele).

This research was supported through our first round of interviews as well. When asked about grocery shopping as a child, one interviewee, a self-described grocery store enthusiast, recalled the following:

> *"As a small child, I used to go grocery shopping with my mom…we'd go every Saturday or Sunday [when I was really little]. We would sit in the kitchen and open the pantries. I mean, she was a mom with three kids, plus a husband, so it was a much more expansive grocery list. And then we'd make the list [together]."*

Another interviewee, an avid homecook, told us the following:

> *"I grew up in a house where my mom would cook and…listen to Dean Martin…and everybody would come into the kitchen and talk and listen to music. It just became this thing that I enjoy. So at the end of the workday, I can't wait to just….turn on some music and…cook"*

In this situation, cooking was not just a means to an end. It was an opportunity for familial bonding.

We kept these anecdotes, and the rest of our research, in mind during our first contextual inquiry, a trip to Pay-Less at 8:30 AM, during which we observed several parents with children who seemed more like passive companions instead of active co-shoppers. We began ideating on how to involve children during the shopping experience.

Ideation and Investigation

Initial Idea

We attempted to address our findings from research through a round of sketching. Our initial sketches explored different ideas that would potentially engage children during the grocery shopping experience. These ideas included (1) a parent-child linked cart system, (2) a modified app coupled with traditional in-store print materials, and (3) a racetrack game that would highlight the child's next "stop" for a predetermined list of ingredients.
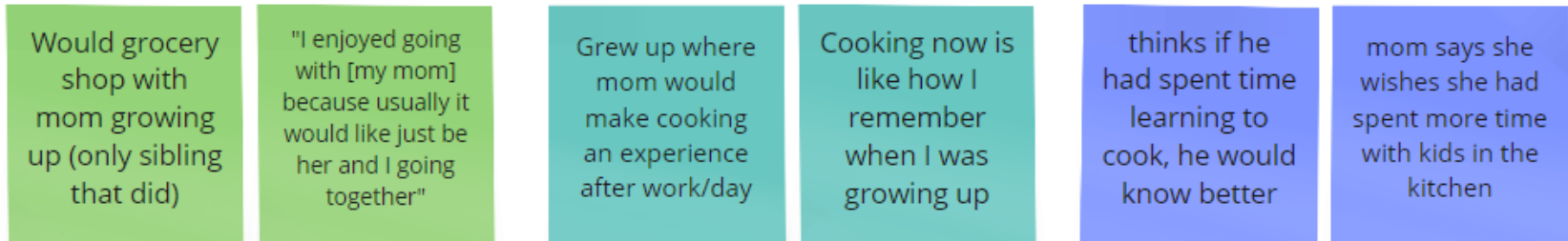

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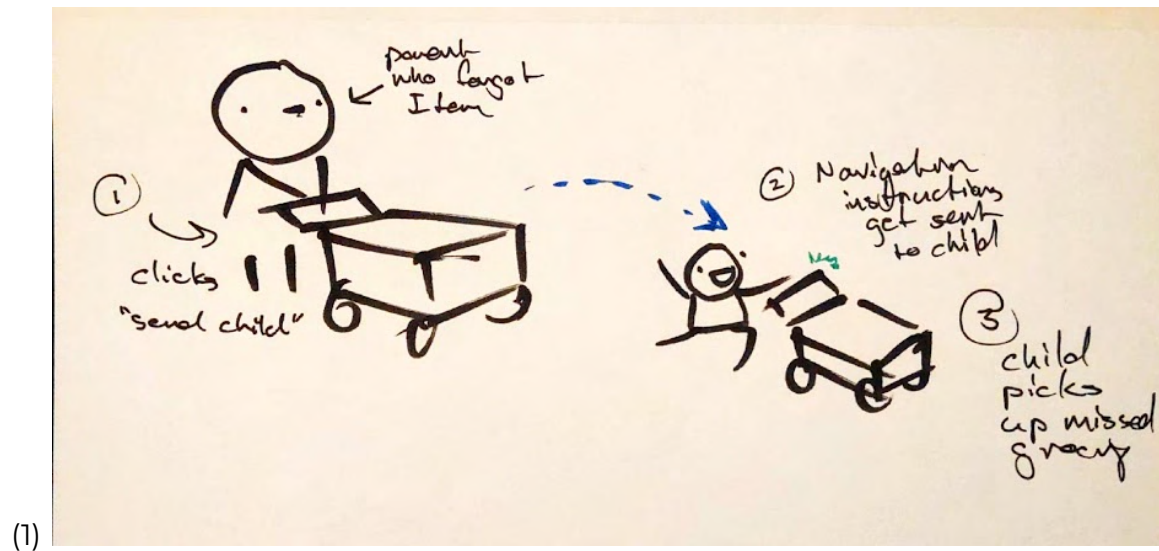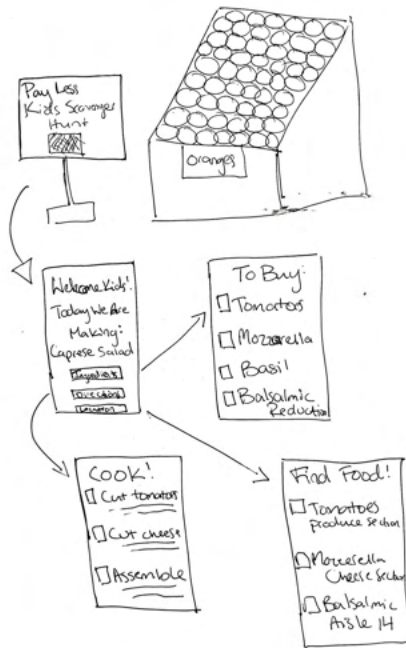
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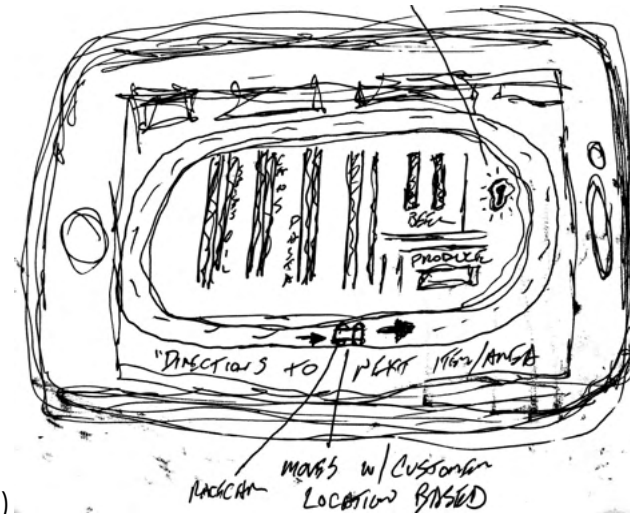
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While all our sketches addressed a variety of approaches to the parent-child co-shopping experience, our ideas encompassed the entire shopping experience, not a single focused aspect. We determined to narrow our scope further and accomplished this by researching projects that directly addressed co-shopping with children.

Around this point, we determined it would be helpful to conduct a few more interviews regarding experiences different shoppers had as a family. Our interviewees included people with strong family grocery shopping memories, as well as people whose parents neglected the family shopping experience. We took notes from the interviews and organized them into an affinity diagram to help identify common perspectives. While our initial diagram didn't offer much insight directly, reorganizing the affinities by emotion presented strong opportunities. This was most clear when it came to feelings of nostalgia as feen in the figure below.

Would grocery shop with mom growing up (only sibling that did)

"I enjoyed going with [my mom] because usually it would like just be her and I going together"

Grew up where mom would make cooking an experience after work/day

Cooking now is like how I remember when I was growing up

thinks if he had spent time learning to cook, he would know better

mom says she wishes she had spent more time with kids in the kitchen

Refinement

We identified the relationships from our emotional affinity diagram as an area of opportunity for increased engagement amongst parents and children. To look further into this, we consulted more literature; this time focusing on the effects of shopping as a family.

Upon discovering how "opportunities for early learning experiences play a key role in supporting kindergarten readiness and future academic achievement (Gregory & Rimm- Kaufman, 2008), we narrowed our scope further to this pre-K age range.

Another project (A Taste for Learning) focused on this same age range. Alongside "fostering children's learning opportunities during grocery shopping," A Taste for Learning encouraged us to "meet people where they are...[because] engaging families at grocery stores reaches them at a place where they already need to go" (Harte, et al, 2017).

At this point, we refined our focus to address three to six year-old children and the co-shopping with parents at Pay-Less stores.

Proposed Idea

Having a clear and focused audience in mind, we decided to meet them where they were (again!) by conducting a follow-up contextual inquiry. Through observations of three various families, we noticed that during the shopping experience, children were relatively distracted whether they were eating a snack or hanging out in a cart. They did not seem to mind these distractions. However, our biggest takeaway from this second session was that children were completely unengaged during the self-checkout process (the preferred method of checkout for the families we observed). Therefore, we decided to focus on this final part of the grocery experience. This discovery led us to another round of sketches. We retained one commonality from our earlier sketches (the recipe element) and brainstormed ways this could involve both child and parent in the checkout experience.

After another round of sketching we decided on the following design approach:
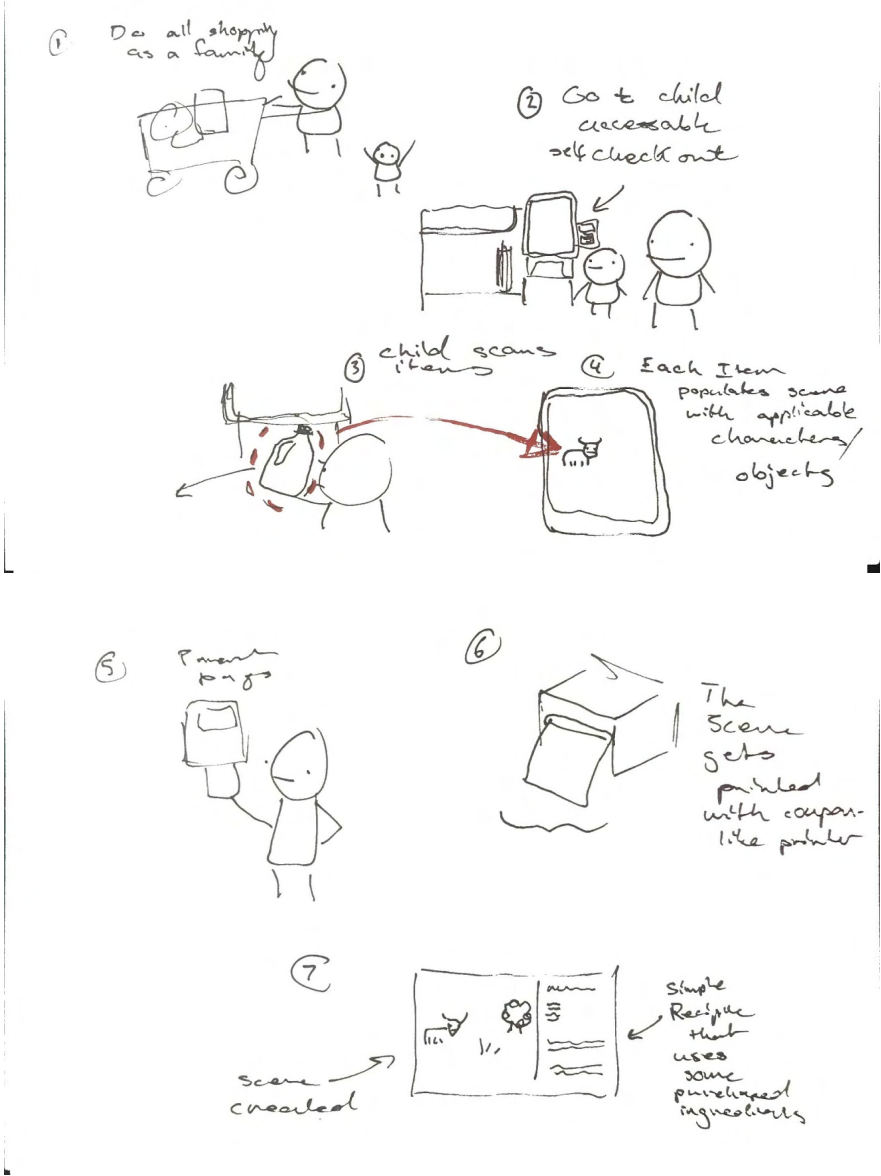
Prototyping and Evaluation

Prototype

When it came to prototyping methods, we truly had to put ourselves in children's shoes. While general concepts and big ideas can be explained to adults, we believed working with tangible objects, such as an egg container, as well as creating sound effects when buttons were pressed, would be necessary in o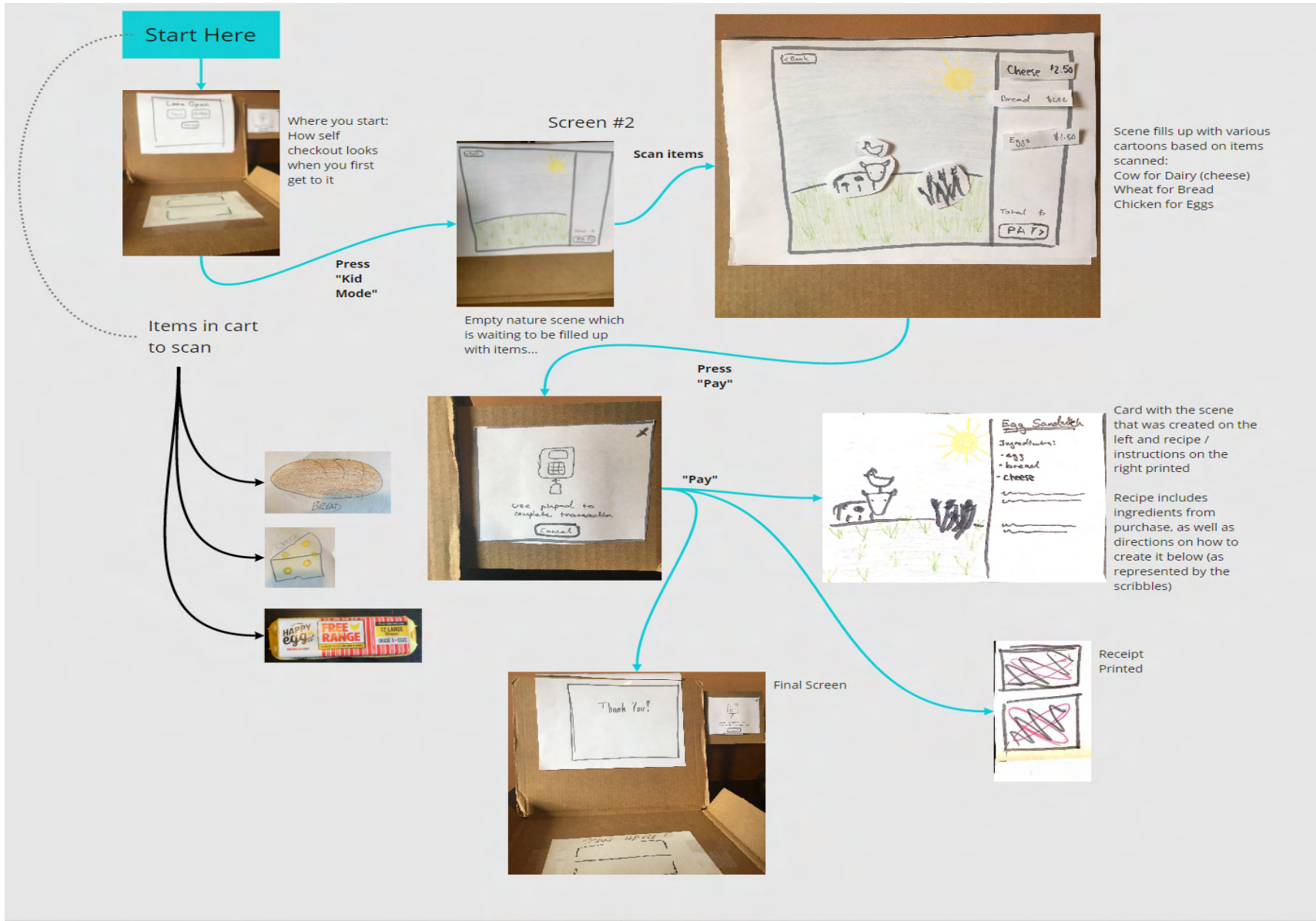rder to engage with children when testing our prototype. Our goal from generating this prototype was to see if children will understand how to use it (through a usability test), if they enjoy building a scene and if they are engaged with the prototype (evaluated through a post-session interview).

To the left is our final prototype for Kid Mode. This prototype is our version of an improved self-checkout station. The features of the Kid Mode Prototype include:

- Scanner
- Touch screen (3 total screens)
  - Initial Screen (shown to the left)
  - Build-a-Scene Screen (underneath this first screen)
  - "Thank you" Screen (the final screen underneath the other two)
- Credit card station (to the right of the "Lane Open" screen)

This prototype replicates what the parents and the child will see when first coming to the self-checkout. From here the child (or adult) can press "Kid Mode" in order to engage in the interactive experience of scanning items, creating a scene, and ultimately, having a recipe card printed off as a means of encouraging them to go home and cook with their parents.

Our prototype task flow included the following steps:

Start Here

Where you start: How self checkout looks when you first get to it

Press "Kid Mode"

Items in cart to scan

Screen #2

Scan items

Empty nature scene which is waiting to be filled up with items...

Scene fills up with various cartoons based on items scanned:
Cow for Dairy (cheese)
Wheat for Bread
Chicken for Eggs

Press "Pay"

"Pay"

Card with the scene that was created on the left and recipe / instructions on the right printed

Recipe includes ingredients from purchase, as well as directions on how to create it below (as represented by the scribbles)

Final Screen

Receipt Printed

Testing

We tested Kid Mode through a usability test and evaluated it through an additional post-session interview to discuss their experience as well as the parent's experience. Our testers included one child who was five, and one child who was three. We made the usability test as interactive and engaging as possible while evaluating if they could use it with minimal adult guidance. As the child was scanning items, we would make beeping sounds, to simulate a scan, as well as "boop" sounds when items would "appear" (be taped to the scene). Finally, we made "shh" type sounds when the receipt and card were being printed. When it came to our youngest user, he was so engaged after the first item, he would make the sound effects himself.

Below we included some images to illustrate details from the prototype. These components (as well as a few others) are all modeled in their respective areas of the user journey diagramed on the previous page.

The top row identifies the items to be scanned with their respective visual components shown in the row below:

We selected these items and categories since they are staple grocery items and most participants would be familiar with them. In addition, we used a recycled egg carton as well as hand-drawn pictures of bread and cheese to minimize the risk of potential food allergies and spoilage.

Through our usability test, we were able to confirm that children were able to complete the task of pressing "Kid Mode" and scanning items without the help of an adult.

Evaluation

Following our usability test, we evaluated the experience with a post-session interview. Our follow-up questions to our users were simple in order to be cognizant of their age. Such questions included:

- What did you like about Kid Mode?
- Would you like it if this was at a grocery store?
- What was your favorite part of Kid Mode?

The younger tester (age 3) responded to most questions with squeals of delight or a broad smile. The older tester (age 5) greeted each step of the usability test with smiles, concluding "it was cool." While the questions above were met with one word answers or nods, we learned more through our observation of the children engaging with Kid Mode., There were moments of joy appearing on their faces as items "appeared" on the screen and the child was in complete control of which items to scan next. Furthermore, both users were focused on what was happening and the prototype was successful in holding their attention.

Finally, we discussed Kid Mode with a parent of one of the children; they described the following regarding Kid Mode:

> *"I would love this if this was at a grocery store! While I do let my kids scan some items, I love the idea of taking home a recipe card that we can cook together when we get home."*

Furthermore, when it came to the actual test, the parent let her child have complete control with little guidance. We believe this level of trust and cooperation led to many moments of delight from the tester throughout the process.

One of the greatest limitations of our testing was our small sample size of only two users. While we did reach out to many potential testers, due to the pandemic and a parent's comfort level, our options were extremely limited. Furthermore, we were testing in a home environment rather than at a grocery store. We would also like to know the effects of the grocery store atmosphere, if any. However, we gained several insights from these tests that guided us to our final prototype.

Refining and Continuing

While we are confident in our idea, we know there are some changes that must be made. In order to efficiently test the usability of our idea, we kept the grocery shopping experience limited to three items. We acknowledge this would not always represent the full experience and families are likely buying more than three items. Therefore, below are some proposed changes we would make.

One proposed change would be to include the addition of animation. It is likely that families will be purchasing more than one item that could fall under the "dairy" category. Therefore, when a second item is added, a movement or sound from the cow, like a growing cow, a shake or a "moo" (or a combination of the three) could be a nice addition. As we discovered in our testing, the addition of sound when the item "appeared" on the screen was met with giggles and joy from the children being tested.
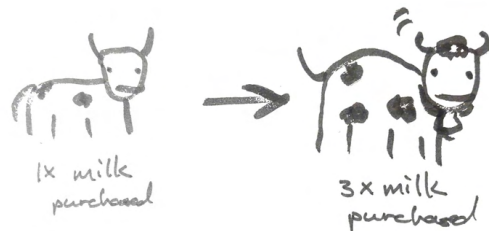
In order to make this truly successful, every grocery item would need to be categorized into a picture. One suggestion we have is only associating whole foods with pictures since it would be most difficult to generate images for processed food or junk food. One suggestion would be to not give these items a picture. By doing this, parents can discuss the negatives of junk food with children thereby assisting in instilling some healthy habits. However, this concept requires further investigation given the differing concept of what it means to be "healthy." This is a factor that can vary significantly with personal and cultural differences. Additionally, groceries purchased during a single trip may not always offer a complete nor accurate representation of the family's diet.

Additional opportunities for improvement do exist, but unfortunately given our small testing sample, it is difficult to identify specific points for improvement.

Conclusion

Summary and Reflection

We had set out to change the way families experience grocery shopping. From our research, testing, and analysis; we believe our solution encourages stronger engagements between parents and children that extend past the grocery shopping trip. Although obvious limitations still need to be addressed within our solution, the changes we made integrate seamlessly in the current environment without degrading the shopping experience for other shoppers. Through each stage of the project's development, we were driven with purpose- from discovering an opportunity in the current setting of grocery shopping to effectively developing a strategy for promoting interactions the space is currently deprived of.

As new designers, we recognize each project as an opportunity for growth. For this project, we placed additional focus on having a clearly defined user group, as well as progressing with clear purpose- areas we had struggled in on previous projects. Clear intentions drove us to make meaningful decisions throughout the process rather than doing things "because that's usually what people do." That being said, although done with clear intent, we often took steps that led us down paths that were not particularly helpful to us. Having a clearly defined focus was particularly useful in this regard, and guided the project back on track. Additionally, scoping down to an approachable audience allowed us to create a far more impactful experience where it mattered.

Given another opportunity to redo this project, or continue it, we have identified a few areas that could lead to stronger results. First of all, as previously mentioned, given the limitations of the project's timing, we were unable to access a satisfactory number of individuals to test our prototype. With more feedback, we would have a stronger understanding of the strengths and weaknesses of our model. Additionally, when it comes to testing, we missed an opportunity to identify from our user's perspective what they felt could be improved in the prototype. On a different note,based on our research, the project has potential to create long term engagements that lead to improved proficiency in shopping and cooking when children grow up and start to become independent. This is something that is unfortunately outside the scope of our project, but are curious to see the extent of the impact.

This project was full of successes and failure- all which are critical to our growth as designers.

References

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