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ReSTORE Innovation Portfolio Team One

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Empowering Students to Make Healthy Food Choices

ReSTORE Innovation Portfolio One



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“Design Thinking to Meet Real World Needs”
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A Note from Innovation Team One

This innovation portfolio represents our journey through Design Thinking to find a creative way to help ReSTORE, the student food pantry at Grand Valley State University. This journey began as just another college course, but ended as a powerful, inspiring, all-encompassing experience. By the end of the class, we learned more about ReSTORE, GVSU's campus environment, and food justice. We also learned about ourselves – our strengths, weaknesses, how we communicate, and how our personal vantage points impact our perceptions – and how those perceptions in turn impact our vantage points.

In the beginning, each team member shared their worries about time restrictions, fears of potential team conflicts, and hopes for personal growth and positive change for ReSTORE. In retrospect, it seems silly that we had such superficial concerns. This is because we gained so many insights from this experience. We are now much better equipped with individual skills, collaborative proficiencies, and the creative confidence necessary to take on more challenging and complex missions in the future.

Compiled in this document is the final product of our classwork collaboration, but it is the beginning of something bigger. Between the lines of this portfolio are meaningful experiences that will shape the way we approach problem solving in the future. Experiences like team meetings that ran late into the evening because we were engaged in deep discussions about social ills that have no obvious solutions. Panic about deadlines, team bonding over shared stresses, and laughs by the hundreds among four unlikely friends.

Design Thinking gave us a process to draw out each other's strengths and complement each other's weaknesses. We learned to work together and to create something that is bigger than anything we could have done on our own. We now share our call with you – please join this collective action. It will take the gathering of many minds to tackle the wicked problems we face.

Thank you in advance for letting us share our journey with you. We are excited about the product of many hours of hard work, and we hope to inspire you to become a design thinker, too.

Sincerely,

Innovation Team One

Innovation Team 1



Design Brief

Background

Food insecurity and hunger among college students threatens academic performance and future success if it impacts degree completion (Jyoti, Frongillo, & Jones, 2005). According to Gaines, et al. (2014), approximately 12.7% of American college students surveyed reported they were food insecure. Even more students reported being at least anxious about their food supplies. This has substantial implications for equity and social mobility in the United States. Students who are unable to complete their college degree will face a competitive disadvantage in the work force. This disadvantage is likely to make it more difficult for the individual to achieve economic stability, thus perpetuating the insecurity and hindering socioeconomic mobility. Therefore, it is imperative to address student hunger so students can remain in school, perform well academically, and graduate so they can enter the job market with a competitive edge.

To help combat student hunger, in 1993, Michigan State University (MSU) founded the first student food pantry in the country (MSU Food Bank, 2014). However, this approach was not adopted by other universities until about 15 years later. Then, in 2008, the number of student food pantries increased to four (Song, 2015).

Substantial progress was needed to encourage wide-spread adoption of this model. In 2012, the food pantries at MSU and Oregon State University co-founded the College and University Food Bank Alliance (CUFBA) to encourage the establishment of more student food pantries by U.S. universities (CUFBA, 2013). CUFBA representatives hope to combat student hunger by shedding light on the overall issue of food insecurity while providing universities with information and resources to start and sustain their own food pantries. Today, there are 216 CUFBA members assisting students in need of food (CUFBA, 2013).

Grand Valley State University (GVSU), a member of CUFBA, is attempting to tackle food insecurity with its own food pantry--ReSTORE. The GVSU student food pantry opened in April 2009 under the oversight of the GVSU Women's Center. The staff recognized that hunger poses challenges for student academic success, and the pantry was created to provide short-term food access. The Women's Center provides additional counseling and suggested resources for students with longer-term needs.

Since its creation, ReSTORE has been recognized as a model organization and increased the number of students it serves. It was certified by Feeding America of West Michigan, which enabled the pantry to purchase food in bulk and save money. In 2015, the pantry moved out of the Women's Center office space to a new location in Kirkhof Center devoted to the food pantry. This move allows the pantry to expand the volume of items it offers, provides more privacy, and helps combat the assumption that ReSTORE is only for women.

As part of the move, ReSTORE increased its storage space and added a refrigerator to stock fresh items. However, the refrigerator stands empty and the available stock still lacks fresh produce. ReSTORE hopes to stock fresh items in the future but faces substantial roadblocks, such as solidifying a source. ReSTORE also hopes to continue diversifying its offerings to include items such as toiletries, feminine hygiene products, laundry detergent, and other household goods.

ReSTORE data reveal a steady increase in both the number of visits and the number of unduplicated student guests. Throughout the pantry's history, the number of visits to ReSTORE fluctuated slightly but increased overall. In the 2011-2012 school year, the total number of unduplicated student guests reported was 119, out of 24,662 students enrolled in GVSU during

that school year. Three years later, in the 2014-2015 school year, the number of unduplicated student guests reached 246, a 106.7% increase in individual student guests.

Four major trends are apparent by analyzing ReSTORE's data. First, there is a noticeable variation in the number of guest visits between Fall and Winter semesters. There is an average of 10.3% fewer visitors during the Winter semesters. Second, there is a substantial difference in the gender distribution of guests. During the past three years, about 81% of ReSTORE guests were female. This disparity has endured, and somewhat increased, as the total number of guests increased. Third, ReSTORE services have continued to serve students of color at a higher rate than Caucasian students, reporting an average of 66.5% of minority guests over the last three years. Last, it is apparent that the vast majority of student guests are traditional undergrads who for the most part do not participate in government-sponsored food assistance programs and have some source of income or financial support.

As part of its mission, ReSTORE also recognizes and attempts to combat many social justice issues on and beyond the GVSU campus. Tackling food justice, classism, gender justice, poverty, and food insecurity are a large part of the organization's focus. These are wicked problems, none of which have immediate solutions. This adds substantial complexity to ReSTORE's operating conditions.

Problem Statement

As a team, we seek to deeply understand all components – and stakeholders – associated with food insecurity on campus. This will enable us to develop a solution that is meaningful and useful for ReSTORE. We believe that guests who are highly satisfied with the ReSTORE experience are more likely to spread the word about the organization, thereby raising awareness and increasing the number of students seeking its services.

But what defines a “highly satisfied” experience? In order to address this problem, we have to understand how the products obtained from ReSTORE are being used and perceived by guests, non-guests, staff, administration, and others. **We aim to understand how food fulfillment is measured against guest preferences in order to improve the experience and better meet guest needs.** Cooking in general can be challenging for any college student. Limited resources further reduces the options for creating healthy, nutritious, and delicious food.

The process toward understanding will include questioning our own assumptions and deeply listening and empathizing with guests. We will explore the resources available through ReSTORE and research the factors associated with food fulfillment. This exploration will provide us with a more empathetic understanding of student food insecurity and what we can do to improve the overall sense of fulfillment experienced by ReSTORE guests.

Ecosystem

Effectively navigating an ecosystem of diverse stakeholders presents its own set of barriers. In order to better understand ReSTORE's ecosystem, we grouped the stakeholders into five categories: (1) Administration, (2) Food Suppliers, (3) Students, (4) Faculty/Staff of GVSU, and (5) Community Organizations. We then created a stakeholder map illustrating these stakeholders and the interconnections among them. We will use our stakeholder map to form a set of dialogue questions will direct us as we collect data relevant to the ecosystem of ReSTORE and the problem we have identified.

Underlying our efforts is a belief that each stakeholder is an expert in their own area and holds unique and equally valid perspectives. Each stakeholder brings unique experiences and

expertise to bear that should and will ultimately enhance the final outcome of our project. The upside to working with multiple stakeholders is that it gives us the opportunity to engage and learn from different perspectives, increasing our empathy around the problem. A difficulty in working with multiple stakeholders, however, lies in figuring out how to integrate each stakeholder's perspective while continuing to move our project forward within the confines of a single semester. Our goal is to collect enough stakeholder feedback to paint a comprehensive picture of the situation in hopes of clarifying and focusing our problem statement accordingly.

Our dialogues with stakeholders will be extremely valuable but limitations are likely to exist. We might be limited to only a few guest perspectives due to a lack of willingness to participate. We wish to interview, understand, and empathize with a vulnerable population, and doing so can be embarrassing and intrusive if guests are not comfortable speaking with us.

Another substantial barrier to stakeholder engagement is likely to be time conflicts. Finding time when more than two people can meet can be challenging. Given limited availability, our collection of interviews might not be a representative sample. We understand the importance of collecting as much stakeholder feedback and information as possible while also appreciating the value of being critical and reflexive in our efforts. We will use the information we gather towards improving our problem statement accordingly.

Research Methods

Our team is taking a convergent-methods approach toward gathering information to generate a comprehensive vision of the problem and robust solutions. We are incorporating secondary-source literature reviews, primary-source stakeholder interviews, field observations, and immersions into our research. By integrating our findings from these research methods, we can create a more detailed and nuanced landscape of the problem and consequently develop better action plans to arrive at a workable solution.

First, we will conduct secondary research to give ourselves a broad and general understanding of food insecurity and food pantries. These secondary sources will enable us to learn from others in the field and gain some background knowledge. It will provide additional data and insight into emergency food provision. The literature also will allow us to benchmark other student food pantries and learn from their experiences. This will spark new ideas for prototypes and help us understand the bigger "mess" of food insecurity.

After gaining a broad perspective of the food insecurity and food pantry landscapes through secondary research, we will begin conducting stakeholder interviews in order to gain deeper insights into the problem at Grand Valley's ReSTORE. Through empathetic dialogues and listening with individuals representing multiple stakeholder groups, we will gain a contextual understanding critical to our innovation efforts.

Our team will conduct dialogues with ReSTORE clients and staff, as well as others in the area of food supply and security. These individuals will include professors, local food specialists, GVSU students, and nutrition experts. We believe that each stakeholder provides a different viewpoint and expertise on the problem of food insecurity. Therefore, hearing multiple perspectives on the issue will allow us to empathize with ReSTORE and better understand the constraints and struggles it faces. The different viewpoints will enable us to immerse ourselves in the mess of food insecurity.

We anticipate hearing conflicting information and opinions from different stakeholders and realize the difficulty of arriving at a solution that meets the needs of everyone as a result. These

dialogues, then, will allow us to better comprehend the complexity of the problem and avoid the temptation to simplify, and focus on a small, discrete piece.

Finally, our research will draw from field observations and experiences. Team members will observe interactions in and around ReSTORE without directly engaging with guests and staff to minimize reactivity. We also will directly engage as volunteers and ReSTORE guests. These ethnographic methods will enable us to enhance our empathy by providing an embedded, experiential understanding of the situation. We believe this multi-pronged research approach will lead to a comprehensive framing of ReSTORE and its stakeholders, providing a holistic approach towards our end goal of improving the guest experience and sense of fulfillment.

Outcomes

We will provide ReSTORE and its guests with an environment that facilitates a fulfilling experience and meets guest needs. Our team recognizes that the multifaceted social justice issues impacting ReSTORE do not have immediate solutions (i.e., gender justice, poverty, food insecurity, classism). We hope to impact ReSTORE by providing guests with additional resources beyond typical food pantry items. This will help “round out” the guest experience to foster a sense of fulfillment. ReSTORE will be more than just a static pantry – it will be part of the GVSU community where students can go when they need a little extra help related to food. The help might relate to food access itself, or food preparation resources, or nutritional advice.

Through the design thinking process, we will help ReSTORE communicate with guests about food and provide relevant resources. ReSTORE will become more than just a food pantry. It will become a dynamic service provider is relevant to the entire student body. ReSTORE will be the go-to place for food-related resources – the campus food tutor.

Stakeholder Map

We created a stakeholder map to visually represent the entities and individuals who are involved in ReSTORE’s ecosystem. This map illustrated the inter-relationships among all the relevant players. We started with a very rough - and quite ugly - map (Figure 1).

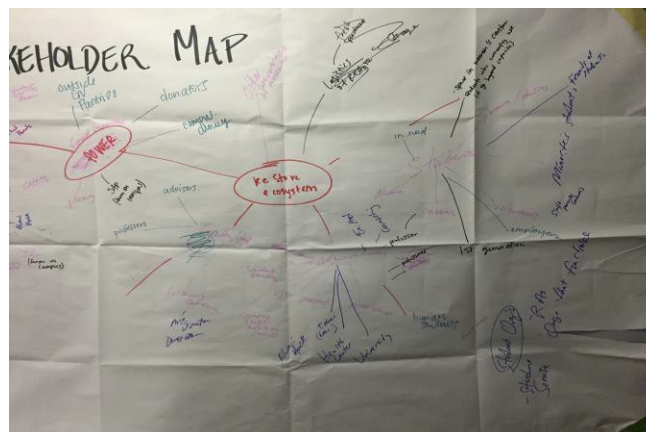


Figure 1. Initial stakeholder map showing the messy process of identifying ReSTORE stakeholders and their relationships to one another.

We then revised the map to a more workable model (Figure 2). As we learned more about the different stakeholders and how they were related, we were able to visually represent, using connecting lines, the relationships between them. Mapping in this way helped demonstrate the complexity of the problem - so many players that are all intertwined!

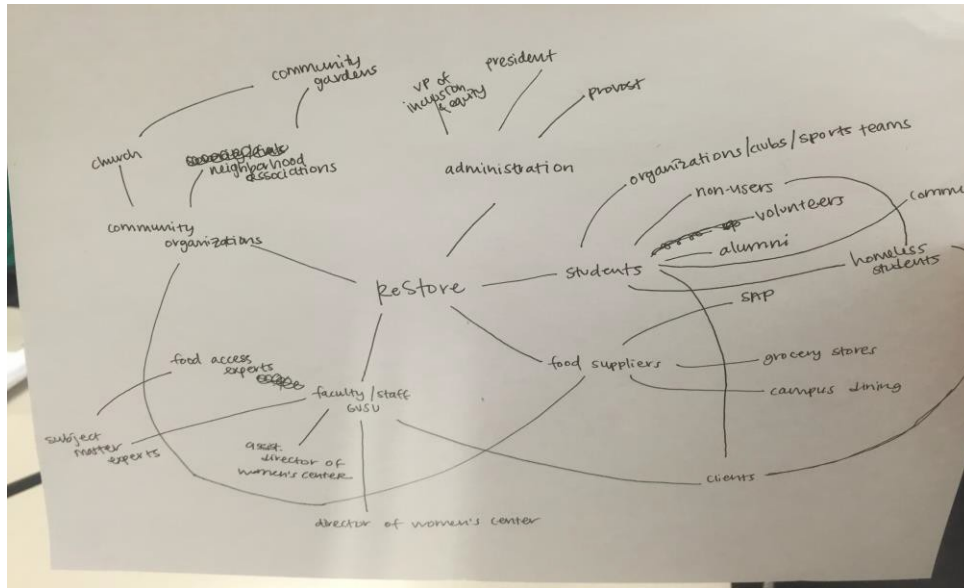


Figure 2. Revised stakeholder map with a clear picture of the interconnectedness of ReSTORE stakeholders.

Finally, we digitized our stakeholder map to allow for color coding stakeholder groups, which helped us further visualize relationships and impacts. It also produced a presentation-quality image (Figure 3).

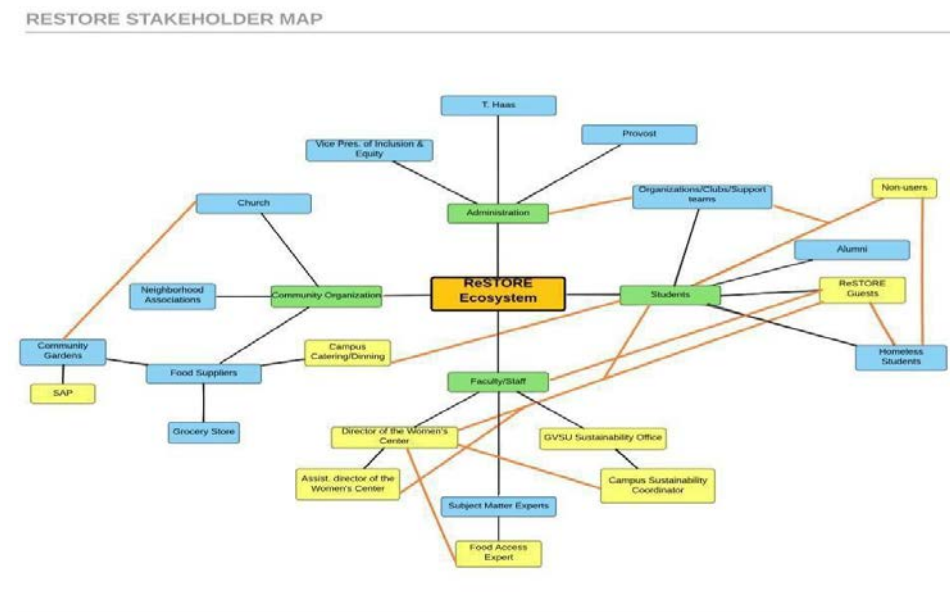


Figure 3. Digitized stakeholder map in a presentation-quality format.

Affinity Map

Each week, we gathered as a team and performed “brain dumps” where we put all of our insights from the week on Post-It notes. These insights came from our research, including stakeholder dialogues, observation, immersion, and literature reviews. The goal was to download these insights and record honestly what we heard, saw, and felt without interjecting our own assumptions. This was where we had to avoid clouding the data by interpreting it and incorporating our own biases. We needed to capture as much information as possible to best understand our problem statement through the experiences of our stakeholders. Figure 4 is a visual from one of four weeks of insight downloads.



Figure 4. Capturing insights from our research.

As we downloaded our insights, we started grouping them based on similar topics. These “affinity maps” helped us draw reference points around our research and visually demonstrated the direction our research was taking us. The process of constructing these affinity maps to organize our insights involved three steps. First, we recorded each insight we gained through stakeholder interviews and secondary research on Post-it notes. Second, we looked for ideas or themes that were related. Finally, we sorted the all of Post-it notes into themed groups. Our dominant themes were food waste, liability/politics, psychology/attitudes, behavior, supply/demand, environment, food literacy, community resources, marketing, and constraints.

Research Bibliography

As part of our research, we conducted a literature review to gather insights from secondary sources. This research focused on food access issues and student hunger. The following section presents summaries of these research articles. Our main findings derived from these literature reviews include the adverse health and performance effects associated with diets lacking proper nutrition, especially among students living on their own for the first time. We also learned that food pantries place little if any emphasis on the nutritional aspects of their guests.

Source 1

<p>Citation: n.a. 2014. Poor Eating Habits Lead to Food Insecurity Among Students. Financial Express. n.a. doi: 1538579617 Publisher: Athena Information Solutions Pvt. Ltd Place of Publication: New Delhi, India</p>
<p>Reason for including this source in your work: This source provides general information regarding food insecurity and provides insight as to how prevalent food insecurity is among current college students. The piece also provides some reasons as to why it is essential for students/our youth to maintain a nutritious diet.</p>
<p>Main argument: When people think of eating problems encountered by college students it is common for people to think that it is an issue of over-consumption or having access to too much food. (i.e. Freshman 15 lbs) However a recent study published in the Journal of Nutrition Education and Behavior reports higher than expected findings. According to the study approximately 59% of students at the University of Oregon were considered 'food insecure' for at least a portion of the last school year. Unable to consistently afford nutritious food during this phase of life, students frequently settle for poor food choices that often lead to adverse health effects. (i.e. lowered immunity, hormonal imbalance, frequent bouts of cold and cough, digestive problems, skin and hair problems, depression, and menstrual disturbances).</p>
<p>Important ideas:</p> <ul style="list-style-type: none">• Misconceptions of food issues in American colleges/schools.• Food insecurity among college students is higher than expected. (Nearly 60% of students at the University of Oregon• Students are either unable to afford nutritious food, lack the proper knowledge of nutrition or both.• Poor nutrition in this phase of life can often lead to adverse health effects and poor eating habits that continue outside of college.
<p>Evidence:</p> <ul style="list-style-type: none">• The findings of a food insecurity study done on Oregon University students.

- The findings of a food insecurity study done by the USDA on American households.

Notable quotes, terms, and concepts: “59% of college students at the University of Oregon were classified as food insecure at some point of the last school year. The figure is a whopping four times higher than the figure for American households (14.5%) as reported in a 2012 USDA study. The study effectively proves that students were not able to eat nutritious and safe food consistently.”

- “Research on college students eating patterns suggests that a higher-than-expected percentage of them might not be eating enough because they can’t afford it.”
- “It’s time our education institutions take note of these issues. Food security along with a safe, healthy food environment is the right of every child (student) and foundation for a healthy youth and a healthy nation”

Strengths:

- Source uses finding of recent studies as evidence to back up their claim (Within the last 3 years)
- Clearly written
- Foundational knowledge of food insecurity among college students

Weaknesses:

- Brief article
- No author listed
- Rather limited information about the study done at University of Oregon (who, what, when, why, and how)
 - Not provided
 - Will do and additional search for U of O food insecurity study to get this information as needed

Connections:

- Numerous adverse health/performance effects are closely associated with a diet lacking the proper nutrition
- It is possible that food insecurity is more prevalent than currently anticipated at GVSU. What can be done to make the food available at ReSTORE more appealing/nutritious to guests?
- Students generally living on their own for the first time have a limited working knowledge of proper nutrition. Meal prep ideas/cards may help combat this issue.
- We need to research/record the nutritional facts of the various foods available at ReSTORE to gain insight on how to prep balanced/nutritious meals.

Questions/Concerns:

- Have we underestimated the amount of students who face food insecurity at GVSU?
- How nutritious is the food offered at ReSTORE? Or. What levels of nutrition can be reached using only items available at ReSTORE?
- What nutritious meals can be prepared using only the items at ReSTORE?

Source 2

Citation:

Akobundu, Ucheoma O.; Cohen, Nancy L.; Laus, Mary J.; Schulte, Marsha J.; Soussloff, Margaret N. 2004. Vitamins A and C, Calcium, Fruit, and Dairy Products are Limited in Food Pantries. *J Am Diet Assoc.* 104:811-813. doi:10.1016/j.jada.2004.03.009.

Reason for including this source in your work:

This paper researched and documented the nutritional aspects of food available in food pantries. Available nutrition is a potential factor in the food satisfaction of ReSTORE guests. A portion of our problem statement is exploring whether the current ReSTORE stock adequately addresses student nutritional needs and what strategies can be undertaken to improve the diversity and nutritional value of available inventory.

Main argument:

Food pantries overall lack fresh fruit and dairy products to provide guests with adequate vitamin C, vitamin A, and calcium. Typically, sufficient protein and fiber are available through breads and meat items. Additional work is needed to offer more fruit and dairy products.

Important ideas:

- The food offered by different food pantries varies substantially based on the types of entities donating/providing inventory.
- The nutritional quality of food pantry offerings is not widely studied or understood, especially when looking at the guest's needs over a period of time longer than three days.
- In this study (analyzed the food items in pantry guests' bags to determine how many days the guest would receive adequate nutrition for each major food group), most food pantry guests were receiving the majority of their daily servings from sweets, fats, and oils, followed by breads/grains. Dairy items provided the least amount of servings.
- In this study, food pantry guests had access to foods with high protein, fiber, folate, and iron content.
- Food pantry guests lacked access to fresh fruit and dairy, providing limited vitamin C, vitamin A, and calcium.

Evidence:

The data collected by the researchers indicated food pantry clients wanted additional fresh fruits, vegetables, and dairy products – the lack of these items in the pantry guests' bags indicated a lack of supply, not demand.

The food in pantry guests' bags would provide adequate servings of bread for an average of 7 days but adequate servings of dairy for only an average of 3 days.

Notable quotes, terms, and concepts:

“Creative efforts are needed for pantries to procure, store, and distribute additional fruit, dairy products, and other sources of vitamins A and C and calcium.”

“The variability in foods offered by pantries can be high because the sources of food vary among food banks, farms, retail store salvage, individual donations, and direct purchases.”

“Most studies of the quality of foods in pantry bags and boxes have based an examination of nutrients and/or food groups on contributing to the needs of individuals or households for 3 days.”

New term – Total Diet Assessment Software (used to calculate the number of food group servings available in food pantry client bags)

New term – INQ score (“the nutrient content of the food bag foods per 1,000 kcal, compared with a standard reference nutrient value adjusted per 1,000 kcal of intake”)

Sweet potatoes skewed the vitamin A results for one site – this outlier was omitted from the study.

Strengths:

Utilized a different research method than other similar studies – looked at the total number of days a food pantry client would have sufficient servings in each major food group instead of checking to see if the client would have sufficient food for 3 days.

Weaknesses:

- Small sample size
- Self-selection bias – sampled from volunteers, not random
- Used old version of food pyramid

Connections:

- The findings correspond with observations in ReSTORE of a lack of fresh produce and dairy. ReSTORE has a refrigerator to store such items but has not used it.
- Emergency food supplies are an important service but more should be done to ensure it’s not just food for the sake of food – that clients are receiving the nutrients they need.
- The nutritional content and variety of food depends on the supply sources – so seek out sources that supply fresh items and/or raise awareness of the need for these items.
- The nutritional value of food pantry offerings can be improved through education of pantry staff and clients.
- Quantitative measures, such as INQ, can be used to evaluate the nutritional value of food pantry items, instead of guessing through observation alone.

Questions/Concerns:

- The findings are highly variable. How possible is it to extrapolate these results and apply them to ReSTORE?
- How well do the items in a client’s bag correspond to the total food intake of the individual? Are they receiving supplemental nutrients from other sources?
- What happens to the food after the client leaves the pantry? Are certain types of items / food groups consumed completely while others are discarded?

Source 3

Citation:

Farr-Wharton, G., Foth, M., & Choi, J. H. (2014). Identifying factors that promote consumer behaviours causing expired domestic food waste. *Journal of Consumer Behaviour*, 13(6), 393-402. doi:<http://dx.doi.org/10.1002/cb.1488>

Reason for including this source in your work:

This paper talks about food waste and possible reasons people contribute to it as consumers. This week in class, we discussed the fact that GVSU catered events tend to waste a lot of food in the fear of legal implications of leftovers being donated, and so I thought that more insight into the reasons people tend to contribute to food waste could help us think about ways to potentially combat it.

Main argument:

Food waste in homes occurs mostly because of normalized behaviors throughout the purchasing, storage and consumption of food where consumers are more likely to throw away food than to risk it being 'bad'. Better food storage methods and knowledge of food buyers could decrease food waste by lessening the likelihood of good food being thrown away or food going bad too quickly due to wrong storage.

Important ideas:

- Participants of study have difficulty in discerning food edibility, especially leftovers
- Improving food storage methods could significantly lengthen shelf life of foods
- Bulk purchases save money but contribute to food waste by providing more food than can be consumed before expiration dates
- Participants made large meals intending to use leftovers, but then never actually eat the leftovers and throw them away
- Increasing food literacy could decrease food waste

Evidence:

Longitudinal studies of 12 participant observations show that food storage practices (systematic, based on available space, and nonsystematic) were the main cause of food waste.

Consumers showed more aptitude to throw away food than risk consumption due to negative past experiences with food consumption.

Notable quotes, terms, and concepts:

“The strongest theme emerging from our analysis is that the majority of expired wastage in domestic environments occurs because of behaviors enacted during food purchasing, storage and consumption”

“A consumer’s knowledge of their current household food supply underpins several influences that result in wastage”

<p>“a consumer’s food literacy can be examined with respect to their personal capabilities to judge a food edibility using their knowledge, skills, and past experiences”</p> <p>“According to VBN’s theory, a consumer’s habit and routine greatly influences their behaviors and changing behavior requires old habits to be broken”</p>	
<p>Strengths:</p> <ul style="list-style-type: none"> • In-depth observation and analysis of consumer habits and food practices • Solid reasoning for food waste tendencies • Presents good propositions to increase food literacy to combat food waste 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Small sample size and high potential variability from consumer to consumer • Does not consider social factors that could contribute to food waste and food literacy • Only speaks for household food waste, not for commercial situations
<p>Connections:</p> <p>We keep looking at ways to increase the sustainability of the food pantry by supporting the supply to it, but thinking about how to decrease food waste could be easier and more attainable</p> <ul style="list-style-type: none"> • Increasing food literacy (which could easily contribute to the guest regaining agency of his/her own food satisfaction) could help to decrease food waste • Consumer behaviors in this case may be similar to guest behaviors 	
<p>Questions/Concerns:</p> <ul style="list-style-type: none"> • What can ReSTORE do to help educate guests about food waste and increase their food literacy? • Do ReSTORE guests need more food literacy? More so than other food consumers? 	

Source 4

<p>Citation:</p> <p>Hohider, C. and Sain, E. 2015. United States Food Insecurity and the Need for Improved Nutrition and Additional Nutrition Education in Local Food Assistance Programs. University of Akron – Honors Research Projects. Paper 159. http://ideaexchange.uakron.edu/cgi/viewcontent.cgi?article=1008&context=honors_research_projects</p>
<p>Reason for including this source in your work:</p> <p>This paper researched and documented how food available at food pantries was utilized by clients, as well as how food pantries could help advocate for clients to improve nutrient intake. The research fits extremely well with our problem statement because it discusses nutrition education for food pantry clients and explores providing recipes.</p>

Main argument:

Food insecurity goes beyond having a sufficient quantity of food to eat and extends to having access to proper nutrition. Popular food pantry donation items often are low in nutritional value. Additional education is needed for food pantry clients to increase consumption of healthier options.

Important ideas:

- Food insecure families lack access to nutritious food, as well as sufficient food preparation knowledge.
- In addition to trying to address hunger, food banks are now starting to tackle issues associated with poor nutrition, such as obesity.
- Areas of poverty are correlated with lack of access to supermarkets and fresh foods.
- Even if food banks start providing fresh options, this food might not be selected by clients because it is unfamiliar and the client lacks food preparation tools.

Evidence:

“Approximately 20 million Americans are affected by food insecurity, which is the highest rate of food insecurity since 1995.” - Yikes

Entire food groups, like fruits and vegetables, often are completely unavailable in households that are food insecure.

Food pantries often have an excess of high-calorie, low-nutrient foods. They often lack fruits and dairy items – foods with vitamins A and C.

Notable quotes, terms, and concepts:

“[At the Akron-Canton Regional Foodbank,] a new emphasis has been placed on distributing fresh produce, with over 6 million pounds of fresh produce given away in 2012.”

“Nearly 20% of Americans read at only a 5th grade reading level, a disparity that must be considered when producing various nutrition education materials.”

“Since 2005, the Academy of Nutrition and Dietetics has identified health literacy and nutrition advancement as priority issues.”

Food bank vs food pantry – these are distinct entities. Food banks are distribution centers that supply food pantries.

“Feeding America has set a goal of distributing 1 billion pounds of fresh produce by 2015 in order to support better nutrition among clients who often consume fruits and vegetables intermittently.”

“Guests of the New York food bank showed support for these restrictive policies and revealed that they would rather receive substantial foods such as meats, fruits, and vegetables rather than soda and unhealthy snack foods.”

“The most commonly reported obstacles to cooking healthy meals were cost, time, and conflicting schedules.”

“The families that reported eating healthy meals often throughout the week were the same families to report budgeting and planning their meals. In addition, many parents demonstrated lack of understanding about food and nutrition.”

Strengths:

- Well-researched with a variety of literature and background material
- Considered nuances like fresh vs frozen
- Compared what people say they want to do (what types of meals they want to eat) with what they actually do
- Called for tailoring an education program to the specific community and understanding that culture’s community
- The researcher prototyped a food preparation demonstration

Weaknesses:

- Assumed education was the key to changing behavior
- Gathered data from food pantry organizers but not other stakeholders, such as clients

Connections:

- Research reviewed by the author discussed various nutrition-based initiatives implemented by food banks. These included:
 - Nutrition profiling (ranking food items based on how often it should be consumed). Restricting the donations accepted (rejecting unhealthy options).
 - Increase availability of fresh produce. This has sometimes led to waste if clients are not familiar with the item and/or don’t know how to prepare it.
- Attempts to “regulate” the nutrition/choices of food pantry clients is controversial. Different stakeholders have different – and strong – opinions.
- Nutrition education programs tested at other food pantries can provide a model for ReSTORE. Other pantries have offered classes that teach grocery shopping on a budget, cooking healthy meals with low-cost ingredients, and growing food. We spoke with the farm manager of SAP, and he mentioned the idea of having ReSTORE clients help on the farm. This would empower the individual by enabling them to grow their own food and potentially overcome some of the stigma of using the food pantry because the individual would be “working for” the food.

- The paper re-iterated something we had heard from our dialogues – that canned and frozen fruits count as being healthy, even though often people will only accept fresh.
- Food pantries that have fresh items often see them wasted because clients are unfamiliar with the items or do not lack preservation methods (a refrigerator) at home.

Questions/Concerns:

- The research discussed nutrition education programs implemented by other food pantries. But how did the pantries develop these programs? Were they based off of presumed needs/wants, or did the clients have a voice?
- How much of people’s food choices are based on habit vs education? Even if people learn more about nutrition, will they actually change their behavior?
- What is the cost of an education program for ReSTORE and where would the money come from?

Source 5

Citation:

Kempson, Kathryn, 2003. Maintaining Food Sufficiency: Coping Strategies Identified by Limited-Resource Individuals versus Nutrition Educators. *J Nutr Educ Behav.* 35:179-188.

Reason for including this source in your work:

This study provides validated food acquisition and management coping strategies used by food-insecure limited-resource individuals to maintain food sufficiency, discovers additional coping strategies used to avoid food insufficiency and food insecurity, and examines coping strategies to advance grounded theory.

Main argument:

This research brief suggests that nutrition educators that work closely with limited-resource individuals are a respectable resource for researching coping strategies used by limited-resource individuals.

Important ideas:

- Validate the food acquisition and food management coping strategies reported by nutrition educators
- Discover additional coping strategies used to avoid food insufficiency and food insecurity
- Examine coping strategies to advance grounded theory
- Apparent convergence of results between those responses elicited from interviewing nutrition educators who work with limited resource individuals and interviewing limited-resource individuals themselves.
- Differing levels of need warrant different levels of assistance.
 - Steps leading from food insecurity to hunger

- (1) compromised quality, (2) anxiety and uncertainty, (3) socially unacceptable meals, (4) use of emergency strategies
- The link between food insecurity and overconsumption
- Food insecure individuals are more likely to be overweight than those who are food secure
- Policy reform proposals
 - Guidelines for how long food banks can use food after it's expiration date should be set
 - Allot the appropriate amount of food to families with children of varied ages, based on current caloric and nutrient recommendations by age group
 - Administering food stamps in more frequent, smaller allotments

Evidence:

Out of the 95 food acquisition practices, 83% of those practices identified were previously identified by the nutrition educators, with only 10 additional coping strategies revealed.

Notable quotes, terms, and concepts:

Food acquisition and management coping strategies are those practices individuals use to obtain food and maintain their food supply after it is acquired.

“In 2001, based on the Census Bureau’s Food Security Supplement to the Current Population Survey, 10.7% of American households (11.5 million people experienced hunger.”

“Participants indicated that cooking with other people helped when, as individuals, they did not have sufficient food to make a meal.”

“In an effort to preserve food, an issue was raised concerning refreezing food: the safety of refreezing meats. Pantries sometimes gave large bags of frozen meats, but the whole bag would need to be thawed for the meats to be used.”

“People (guests) don’t know and don’t care how long you can leave foods out.”

“Four coping strategies reported by the limited-resource individuals were not found in the literature: pooling food to cook with other people, getting food from the workplace, repeated participation in research studies, and avoiding inviting guest when food would be expected.”

Strengths:

- Compares points of view of both the target population (Limited Resource Guests) and nutrition educators
- Well-researched
- Study findings can be generalized to the population

Weaknesses:

This work did not establish the variable interrelationships, a task that is necessary for theory development. (research was meant to advance grounded theory)

<ul style="list-style-type: none"> • Includes proposals for policy reform based on the findings of the study 	
<p>Connections:</p> <ul style="list-style-type: none"> • Perhaps ReSTORE guests can be effectively represented by those working closest with them (Administration). • Participants in this study indicated that cooking with others people helped (pooling food to prepare a meal) • Budgeting skills and economical shopping could potentially be taught to ReSTORE guests • Differing levels of need warrant different levels of assistance (How is this assessed currently @ ReSTORE?) • Issues with perishable foods from food pantries (eg. frozen meat) 	
<p>Questions/Concerns:</p> <ol style="list-style-type: none"> 1. Has budgeting assistance and/or economical shopping techniques been provided to ReSTORE guests? (The study finds most limited-resource individuals rarely bring up budgeting as a way of coping to get by) 2. How might ReSTORE efficiently and effectively utilize their refrigerator in a way that best suits the individual guest and allotted space? (Individually wrapped meat for thawing purposes) 	

Source 6

<p>Citation: Kicinski, Leah R. 2012. Characteristics of Short and Long-Term Food Pantry Guests. Michigan Sociological Review. Volume 26: 58-74. http://www.jstor.org.ezproxy.gvsu.edu/stable/23292651?pq-origsite=summon&seq=1#page_scan_tab_contents</p>
<p>Reason for including this source in your work: This source provides good insight into the characteristics and differences between short and long-term pantry guests, therefore giving us information that can help us understand what modifications to the food pantry need to be made in order to accommodate both better.</p>
<p>Main argument: Food pantries are serving both households in desperate and continual need of food supplementation as well as households only needing temporary assistance.</p>
<p>Important ideas:</p> <ul style="list-style-type: none"> • Guests of food pantries vary from person to person as much as food pantries vary from pantry to pantry—though they are all there for the same reasons and purposes, each specific situation is a little different

- Guests turn to more than one source for food supply
- There is a growing need for food pantries passed the average two years previous found for guests to need them
- Long-term unemployment related to usage
- Guests endure negative stigmas at the pantry, probably lowering the usages of pantry

Evidence:

- 51% of pantry guests only began using in the last 2 years, 56% of which had also lost their jobs within the same time period
- 24% of pantry guests do not have any other means of food assistance, while 49% used only food stamps in addition
- A majority of guests were only unemployed for less than a year (31.5%)
- Volunteers at food pantries were overheard speaking of the guests in negative ways
- Positive correlation between age and usage of food pantry

Notable quotes, terms, and concepts:

Food insecurity: “when some members of a family or household limit their intake of food, or their normal eating patterns are adjusted to provide more food to other household members”

Emergency food support: “an established resource to support those who are food insecure”

Givers vs. Receivers: social power structure between pantry guests and pantry volunteers or officials

“After a pantry guest had been served and left, researchers heard the volunteers commenting about the alcohol on the guest’s breath and shared their feeling that the guest would be better off spending money on food rather than alcohol” (Kicinski 2012, p. 72)

“Pantry guests access the services and are assisted by the pantry workers and volunteers who hold the power (Blau 2003). The norm of reciprocity would imply that since the pantry guests are receiving the food, they should be giving back to the pantry in some way (Blau 2003). Pantry guests do not have adequate resources to do so, and although the pantry workers and volunteers are aware of this, they expect what they understand as proper behavior in exchange for pantry services” (Kicinski 2012, p. 72).

“The researcher witnessed a pantry guest being yelled at by a volunteer that shopping baskets could not be used to take items out to cars. Returning to the researcher, the guest was in tears regarding the experience and hoped to add this experience in her survey responses” (Kicinski 2012, p.71).

<p>Strengths: Provides good statistical evidence of characteristics of pantry guests</p>	<p>Weaknesses: Infers conclusions from other observational data without making clear connections</p>
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Connections:

- This resource gives us insight into the patterns of food pantry guests around Michigan

- This will help us to better define our problem statement to better serve these types of guests
- We want to provide a better experience to guests at the pantry, so a better insight about the generalized problems in the pantry will help us figure out what we need to focus on

Questions/Concerns:

- Maybe the stigma against the food pantry will still act as an obstacle in our problem statement...
- We need to be very specific in asking guests about their experiences since this research explicates how unreliable and varying existing research on food pantries is

Source 7

Citation:

Kicinski, L. R. (2012). Characteristics of short and long-term food pantry guests. *Michigan Sociological Review*, 26, 58-74.

Reason for including this source in your work:

This paper researched the short and long term characteristics of food pantry guests in Michigan. Specifically, this paper looks deeper into the needs of those who are accessing services of food pantries in Michigan. This paper fits with our problem statement because in order to heighten food satisfaction, we will need to understand the short and long-term needs and expectations the guests have in mind.

Main argument:

Unlike short-term food pantry guests, long term guests are those who are more likely to use government assistance programs such as food stamps and WIC. For short-term guests, food pantries serve more as an emergency food need rather than a consistent place of food dependence.

Important ideas:

- Access of West Michigan is the food pantry network that serves Kent County. This organization supports congregational food pantries with resource centers across Kent County.
- Food pantry services are utilized at a high rate during the beginning time of unemployment.
- The average length of time a guest utilizes the food pantry is about 24 months.
- The decision to use the food pantry as a source of food was typically influenced by referral made to those in other food giving programs (i.e. farmer's markets, doctors' office, etc.)
- Food pantry guests are not a monolithic group and food pantries are not solely meeting emergency food needs.

Evidence:

Interviews with 104 pantry guests across Kent County within the last 24 months were taken into consideration when discussing the validity of these results.

In an effort to understand what other community services pantry guests do use, survey questions were given with “yes” or “no” response questions. “Yes” was often checked when asked “Do you have access to government programs to support your food supply”

Notable quotes, terms, and concepts:

“Essentially two different groups of food pantry guests exist; those who began using pantry services within the past two years (50.9 percent) and those who have used services over a decade (22 percent).”

“As noted earlier, data on use of food pantries in the US is inconsistent because each pantry collects data in their own specific way to meet their own needs.”

“As this research suggests, the reasons a household turns to food pantries to supplement their needs are varied. Pantry guests are not all identical in their characteristic, reasons for food need, or their food pantry experiences.”

“There is a positive correlation between food pantry guests and food stamp guests.”

“Use of food pantries in the US is inconsistent because each pantry collects data in their own specific way to meet their own needs.”

No new terms– all terms defined in the ReSTORE ppt.

Strengths:

- Group of those who are interviewed are clearly defined. Methods of interviews and data collection sources are clear and concise.
- Data collected from both pantry organizers and guests.
- Defended key findings within research with facts from data collection process.
- Included real life observation of food pantries.

Weaknesses:

- How to relate this to young adults? Is there a correlation between younger adults and adults who are food stamp and pantry guests?
- No prototype built for possible food pantry weaknesses

Connections:

- There was a part where the food pantry guest ended up in tears due to how a food pantry volunteer handled a situation at the food pantry. This is interesting... the affect that volunteers have on the guests themselves. How volunteers can even, based upon the attitude and language they use, can affect food satisfaction.
- There is a limit to food pantry data collection on the national level, meaning that there is discrepancy of data among university food pantries as well. Our group wants to understand food satisfaction, but in order to do so, we have to also incorporate the language barrier between not only guest and staff, but also staff to staff to heighten the input that we gain.

- If many of those who are long term food pantry guests also have other supplemental food programs through the government, what do they purchase outside of the pantry to make their meals satisfactory? Our team should think about this specifically for students.

Questions/Concerns:

- If the volunteers are going to be the ones implementing the food satisfaction after our class is over, how do we ensure that it is done with dialogue that is appropriate to the guest and not the staff, PR, or other?
- Making sure that we are adjusting the food satisfaction for the college student those who make use of the pantry.

Source 8

Citation:

Hoisington, A., Shultz, J. A., & Butkus, S. (2002). Coping strategies and nutrition education needs among food pantry guests. *Journal of Nutrition Education and Behavior*, 34(6), 326-333. doi: 10.1016/S1499-4046(06)60115-2

Reason for including this source in your work:

This report included how guests of food pantries across the state of Washington have access and barriers to food, strategies for coping with food insecurity, and nutrition education needs. Our problem statement for our team includes understanding the guest in many dimensions— guest food security needs, guest food barriers, guest’s gap between nutrition and education. This article will help our group and ReSTORE develop better food satisfaction outcome for the guest.

Main argument:

Guests of food pantries reported a high concern of getting through the month with access to healthy foods. Guests also reported regularly searching for ways to stretch their food dollars (EBT/WIC) while spending their own personal money on food as well. Finally, food educators need to be more responsive to the educational and emotional demands that are associated with food insecurity, especially on the community level.

Important ideas:

- Majority of focus group participants from all nine sites reported reductions in their own food consumption, indicating food scarcity.
- Participants had many coping strategies that were integrative and creative, but did not ultimately decrease hunger in many ways. Most individuals created ways to stretch food dollars by using discount coupons, eating old leftovers, buying food substitutions (i.e. powdered milk instead of fresh milk).

- Food pantry guests seek their own relatives for advice before consulting with professionals or commercial sources (i.e. cookbook, recipe cards, magazines.)
- Guests of food pantries explained how when money is a limit, time to think nutritionally is out of question.

Evidence:

A total of nine food pantries were identified as study sites. Each food pantry was located in a different demographic and geographic area of Washington. Each study site held a different focus group. Audiotapes were used to record and transcribe focus group findings for accuracy.

Notable quotes, terms, and concepts:

“Food insecurity pushed families to look for atypical sources of food, such as emergency foods, shared meals with others, trading labor for food, and trading food to diversify food resources.”

“Participants described learning processes that were both informal (personal experience growing up and as adults) and formal (taking classes through the Special Supplemental Nutrition Program for Women, Infants and Children [WIC] or the food bank).”

“Participants related difficulty in juggling work, school, or both with preparing meals. One participant who was in college and worked relied on various friends to feed her everyday.”

No new or complex terms— case studies were mostly dialogue and words that have already been defined by ReSTORE.

Strengths:

Dialogue was accurately recorded between guests of food pantry and the interviewer.

A lot of good qualitative data was learned throughout the findings of interviews.

Weaknesses:

Responses may have been reactive, since involvement in this survey was incentivized by a \$40 gift certificate towards groceries.

Only guests who speak English were researched— food pantry guests are very diverse typically and this limits the overall population of pantry guests.

Connections:

- Findings of this case study done in Washington align well with what social justice issues ReSTORE is also encountering. Understanding these issues and the ways in which guests are overcoming them is helpful information that will give us a starting point on dialogues with our own guests of ReSTORE.
- One of our ideas for our design-thinking project was to somehow recreate the food satisfaction of the pantry items that are currently in place— this article discusses different ways guests interpret knowledge. Information given by those

with authority is often viewed as formal information which can be intimidating or seem top-down and authoritative.

- There are many coping strategies that are regularly practiced by guests regularly. Our team should consider these when deciding what to ultimately do with our project.

Questions/Concerns:

- How do we apply our knowledge and our own research towards food security, food justice, gender justice, to our guests without seeming to formal or unapproachable? Are we making sure that we are aware of this before going into interviews or implementing project ideas?
- What types of food are expensive at grocery stores that we could incorporate a higher intake of in ReSTORE?

Collaborator Debriefs

Collaborator debriefs, short presentations given to the key collaborator three times during ideation and prototyping, gave our team the opportunity to share our insights with the collaborator and gain feedback.

Collaborator Debrief 1

The first collaborator debrief was with the ReSTORE director Sharalle Arnold. During this presentation, our team shared our problem statement, top three insights, and top three barriers. Our initial problem statement was:

We will improve the user experience by diversifying support around using the available inventory.

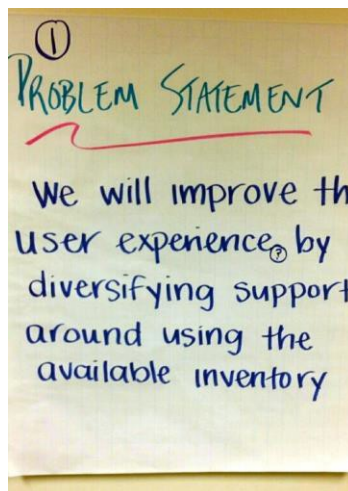


Figure 5. Our initial problem statement presented during the first collaborator debrief.

Our top three insights at the time were:

1. Top down AND bottom up approaches are needed to elicit change
2. Using ReSTORE for food liberates more disposable income for buying other things
3. Parents/households are a source of informal knowledge/modeling

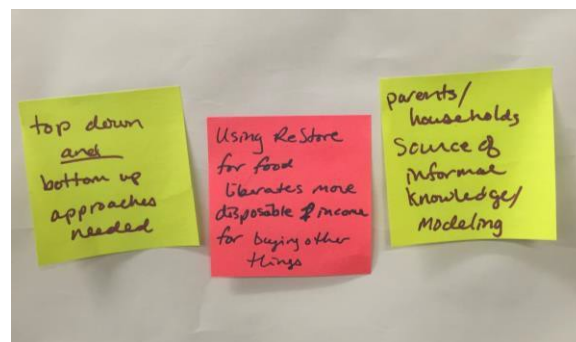


Figure 6. Top three insights shared during the first collaborator debrief.

Our top three barriers at the time were:

1. Difficulty gaining empathy with limited access to actual guests of ReSTORE
2. Need to retain a sense of student agency
3. There are multiple definitions of “need”

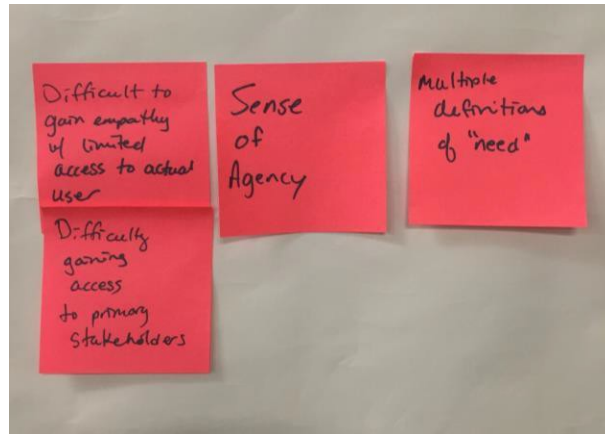


Figure 7. Top three barriers shared during the first collaborator debrief.

Collaborator Debrief 2

The second collaborator debrief was with the student manager of ReSTORE, Glenn Miller. This debrief allowed us to get additional feedback from a stakeholder with personal experience using ReSTORE. During this debrief, we presented our revised problem statement, three key insights, three from-to statements, and three barriers.

We revised our problem statement after the first collaborator debrief. We realized that the wording was convoluted and made the statement difficult to understand. We kept the same concept but adjusted the terms to ensure we conveyed the message clearly. Our revised problem statement was:

ReSTORE needs to provide students with tools for making beneficial food decisions.

We also shared the following three key insights gathered from stakeholder interviews, observations, and research:

1. ReSTORE needs transparency about food supply
2. ReSTORE needs to provide students with tools for making beneficial food decisions
3. Students need more food literacy

We took our insights and converted them from passive statements to active, action-oriented statements using the from-to process. The from-to statements we shared during the second collaborator debrief were:

1. From: ReSTORE offers food students can come receive --> To: A service provider for nutritional and food prep resources
2. From: Students grab most convenient food item --> To: Students have the knowledge and agency to select nutritional items
3. From: Students come to ReSTORE location and pick up what is available --> To: ReSTORE uses technology to distribute food availability information

Finally, we shared the following three barriers we were currently facing:

1. Connection with guests of ReSTORE
2. Understanding specifics about food waste (causes, liability)
3. How to introduce food literacy in ways that will be adopted

Collaborator Debrief 3

The third and final collaborator debrief was again with ReSTORE director Sharalle Arnold. During this presentation, we discussed five ideas we developed that would address our problem statement, our top two ideas we prototyped, three key insights from testing our prototype, and three barriers.

The five prioritized concepts from ideation were:

1. Mobile app
2. Recipe book
3. Annual event in conjunction with food drive
4. Protocols for distributing leftover food from campus dining/catering services
5. Partnership with community farms as a source of fresh produce

Our top two prototype concepts were:

1. Mobile app to dissemination pantry food availability/needs and food preparation information
2. Annual event in conjunction with food drive

The three key insights from prototype(s) review with stakeholders were:

1. GVSU students find campus apps useful and use them frequently
2. Strong interest in easy to access food literacy/nutritional information (an easy way to stay informed)
3. ReSTORE can reach out to a broader student base with an event like the “Chopped” event (free food is a motivator)

The three barriers we were facing were:

1. Lack of access to ReSTORE participants
2. Convoluted bureaucracy
3. Conflicting goals among stakeholders

Summaries of Top Five Innovations

Our team felt very energized by the ideation process— we were excited to transfer our insights into action. We began by affinity mapping, which involved grouping our insights based on themes. Our dominant themes were food waste, liability/politics, psychology/attitudes, behavior, supply/demand, environment, food literacy, community resources, marketing, and constraints.

The food waste theme appeared from the most recent research and really drove our ideation process. Through this research, we learned that most food waste is unintentional, not due to deliberate choices (or lack of caring). Other times, food waste is unnecessarily created from institutional policies. For example, university policies prohibit the distribution of leftover food from a catered event. Though well-intentioned to protect human health, these policies run counter to other institutional goals, such as sustainability. The juxtaposition of these two policies, combined with ReSTORE's need to offer more nutritious - yet convenient - food, inspired our team during the ideation process. This motivated us to create need statements from our insights that capture this multi-faceted, complex problem.

One of our need statements is that ReSTORE needs better transparency about available food items so students know what is on the shelf before they arrive. A notification method also will enable ReSTORE to let guests know when fresh and pre-prepared items are available. A method of immediate communication is key if ReSTORE is going to facilitate access to leftover food from catered events.

We started ideating around the need for rapid information dissemination. Our initial idea was the creation of a mobile-based application. This app would be designed to appeal to GVSU students in general - not just ReSTORE guests. The app would use ReSTORE branding, thus acting as a marketing tool to raise awareness about the food pantry. But it would expand its reach beyond ReSTORE clients by providing food literacy information relevant to most college students. Such tips would include how to eat on a budget and prepare easy, quick recipes that are still healthy.

The app also would allow ReSTORE to send news blasts to anyone who opts-in to receive the notices. These notices would let people know when certain items are available at ReSTORE, such as fresh foods. The blasts also could be used to notify people about leftovers from a catered event in the conference room where the event was held. This would reduce the amount of food waste being generated on campus and provide students with the quick, convenient food they desire. The following are brief descriptions of our top five ideations.

1. Mobile-based application

Our team could develop a rough sketch of a mobile-based application to facilitate information dissemination between ReSTORE and the GVSU student body. The app would serve a dual purpose of providing information as well as enhancing ReSTORE's reach. It would be designed to provide food literacy information relevant to GVSU students as a whole. This would make ReSTORE a resource for all students about nutrition and food preparation information. The app would be branded with ReSTORE marketing materials, putting the ReSTORE brand in front of a much wider audience. Students also could opt in to receive news blasts from ReSTORE, such as notifications when fresh produce and/or prepared foods are available.

2. Recipe book

We could update ReSTORE's recipe book to incorporate recipes that utilize the types of foods available in the food pantry. This book would provide nutritional information and tips for meeting nutrient needs on a limited budget. Recipes would be generated through student submissions. This would help ensure the recipes are relevant to GVSU students. It also would increase buy-in and retain student agency.

The recipe book would be flexible and culturally sensitive in order to avoid pushing privileged values. It would incorporate a diverse array of recipes to reflect the diversity of the GVSU student body. The recipes also would support flexibility around fruit and vegetable consumption - recipes will incorporate frozen and canned produce, not just fresh. The recipe book would be made available electronically through the ReSTORE website to reduce the cost and improve accessibility.

3. Annual event in conjunction with food drive

We could develop a campus event in conjunction with the annual food drive to raise awareness about ReSTORE and gather food stock for the pantry. The event would have a theme of food systems. It would raise education and awareness about nutrition, food preparation, and where food comes from. Community organizations and student groups would host informational booths with engaging activities. For example, the Sustainable Agriculture Project would host a booth talking about locally sourced food. Students from the nursing school would host a booth about nutrition.

The event would feature a "Chopped"-style cook-off. Participants would compete to cook meals from items available in the ReSTORE food pantry. Students attending the event would be the judges and determine the winner. Attendees would be encouraged to bring food donations to the event. These would be stocked in the ReSTORE food pantry.

4. Protocols for distributing leftover food from campus dining/catering services

Currently, there is an abundance of leftover food from campus dining/catering being thrown away. We could establish a working relationship between ReSTORE and GVSU Campus Dining/Catering. This idea would enhance the zero-waste initiative on campus and provide quick grab-and-go foods for ReSTORE's guests. We would develop a protocol enabling this food to be consumed by students in need instead of being discarded. This protocol will work towards GVSU's sustainability goals and allow ReSTORE's guests to obtain food selections that are quick and require minimal preparation. The demand for quick grab-and-go foods came up frequently within our stakeholder dialogues.

5. Partnership with community farms as a source of fresh produce

We could strengthen the working relationship between ReSTORE and the GVSU Sustainable Agriculture Project to help solidify a fresh food source for ReSTORE guests. This partnership would include ideas for additional collaboration regarding event planning and volunteer pooling in order to encourage a mutualistic, symbiotic relationship between the two organizations. We would establish a trade of volunteer service and event collaboration for fresh food donations to increase student involvement and awareness of both ReSTORE and the Sustainable Agriculture Project. Implementing this model of food sustainability between ReSTORE and the Sustainable Agriculture Project would create a multi-disciplinary conversation about potential solutions for these wicked problems among GVSU students.

Written Descriptions of Two Design Prototypes

Our team began with five ideas that would address our problem statement for ReSTORE. After presenting our five prototypes during our second collaborator debrief, we took some time to reflect on the feedback we received. We talked over our insights as a team to decide what prototypes we thought would best meet the needs of ReSTORE guests. We then narrowed down our list of ideas to the two that best fit the problem statement and most strongly reflected the insights gathered through research. Our top two ideas that we prototyped are summarized below.

Mobile App

Our team will develop a mobile-based application to facilitate information dissemination between ReSTORE and the GVSU student body. This app will serve a dual purpose of providing information (i.e., hours open, FAQ, and location) as well as enhancing ReSTORE's reach. The app will be branded with ReSTORE marketing materials, putting the ReSTORE brand in front of a much wider audience. It will be designed to provide food literacy information relevant to GVSU students as a whole.

The mobile app will include information regarding nutrition, food preparation, and other up-to-date information that is specific to the supply available at ReSTORE. It will also have the ability to directly notify students and staff about supply updates (including, newly available inventory or low supply of specific items). With this app, ReSTORE will have a method of communication that will create transparency between guests and the ReSTORE staff.

Creating this mobile-based application allows ReSTORE to communicate with guests 24/7 rather than only when participants are in the physical space. The app also will host tools and resources to help students to make beneficial food decisions. It creates a place for nutritional and food preparation support that is easily accessible – and private – when the student is in need.

Annual Event

Our team will create a campus event in conjunction with the annual food drive to raise awareness about ReSTORE and gather food items for the pantry. The event will have a food-based theme relevant to the GVSU student population. The goal of this event is to raise education and awareness about nutrition, food preparation, where food comes from, and the social justice components of food access. The event will feature activities and informational booths with engaging activities hosted by community organizations and student groups. For example, the GVSU Sustainable Agriculture Project would host a booth about locally sourced food. Students from the nursing school would host a booth with nutrition-focused activities.

In order to draw attention to this annual campus event, we will feature a “Chopped!”-style cook-off. President T. Haas will be a guest contestant to draw attention to the event. Participants will compete to cook meals from items available in the ReSTORE food pantry. Select students attending the event will be the judges and determine the winner.

The event will help foster a new perspective of the services provided by ReSTORE. Attendees will be encouraged to bring food donations that will be stocked in the ReSTORE food pantry. The food drive portion of the event will highlight the need for a wider assortment of nutritious food at the pantry. The event also will emphasize that ReSTORE is a resource for all

students. All college students can benefit from support in making nutritious food choices on a limited budget. This event will provide all students an opportunity for interactive engagement with ReSTORE that they otherwise might not experience.

Final Prototype

Our team will develop a mobile-based application designed to facilitate information dissemination between ReSTORE and the GVSU community. This app will transform ReSTORE from a static food provider to a dynamic service for the entire GVSU student body. Through the app, ReSTORE will be accessible 24/7 rather than only when the physical space is open to guests.

This mobile-app will serve a multi-faceted purpose: a student resource and a marketing tool for ReSTORE. The app will provide resources including nutrition and food preparation information, as well as basic information such as ReSTORE's hours of operation, food availability, location, and contact information, as well as enhancing ReSTORE's reach. The also app will be branded with ReSTORE marketing images, putting the ReSTORE brand in front of a much wider audience (Figure 8). The food literacy information provided through the app also will be relevant to all GVSU students, broadening the appeal of ReSTORE to many more students, beyond the guests seeking food supplies.



Figure 8. Mobile application home screen.

The mobile app will include announcements and resources relevant to all GVSU students (Figure 9). These resources would come from diverse sources ranging from experts to other students. This would incorporate a bottom-up and top-down approach, which our dialogues indicated was the best approach for generating behavior change. It also would allow students to retain a sense of agency and voice.



Figure 9. Mobile application announcements page.

The app will include a real-time list of inventory on ReSTORE’s shelves (Figure 10). This will allow guests to see what is available and plan their shopping accordingly. It also will allow potential donors to see current inventory needs.



Figure 10. Real-time inventory list.

The app also will have the ability to directly notify students, faculty, and staff who opt in to the notifications (Figure 11). These notifications would include announcements about new

inventory or low supplies of specific items. This allows for transparency and real-time updates between ReSTORE guests, GVSU students, and ReSTORE staff.

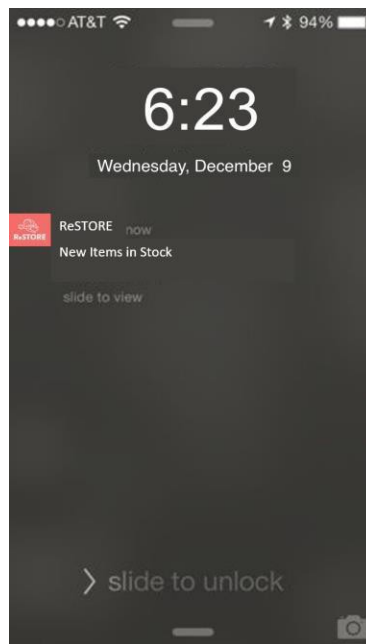


Figure 11. ReSTORE will be able to send notifications to all app users who opt in to the service.

As a part of our immediate information dissemination goal, ReSTORE will develop a working relationship with GVSU Campus Dining and Events Catering. This relationship will enhance the zero-waste initiative associated with the campus sustainability goals by reducing food waste associated with dining and campus catered events. Due to liability concerns, ReSTORE is not able to move these leftovers to their space, and the leftovers often go to waste even though there are hungry students who would definitely appreciate them. The app would help solve this problem by side-stepping liability concerns, as ReSTORE can send a news blast through the app letting guests know where leftovers are available and the students could pick it up themselves. The app will provide app users with push-notifications of when leftover foods are available for the guests of ReSTORE. Protocols will be developed so this food goes to students in need.

This feature will enhance GVSU's sustainability goals and allow ReSTORE guests to obtain food selections that are quick, relatively nutritious, and require minimal preparation. Our mobile app will provide real-time notifications so guests are alerted when and where food is available at different locations on campus.

Providing GVSU students, guests, administration, and staff of ReSTORE with this mobile-based app will create a platform for efficient communication. This will further increase the accessibility to ReSTORE, as well as educating students. As ReSTORE continues to develop and change, the app will encourage such progression, as it is easy to update.

Process Presentation

We prepared a formal presentation about our team’s personal journey through the Design Thinking process. This was presented to a multitude of stakeholders, including undergraduate students, GVSU administrators, faculty, staff, and more (Figure 12). This presentation allowed us to generate further dialogue and discussion around our prototypes.

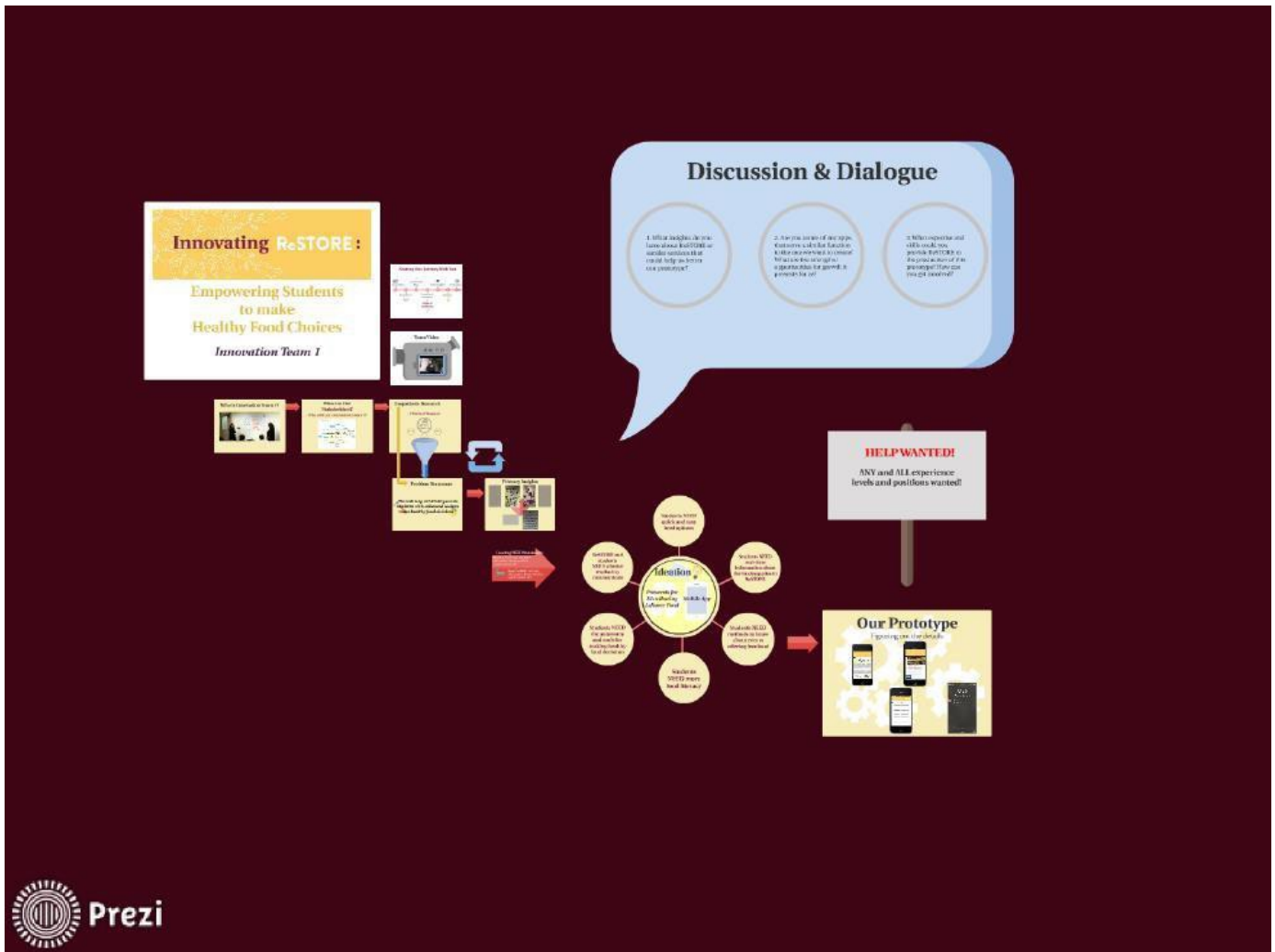


Figure 12. Image of our final presentation, showing the journey.

See Attachment A for images of the individual presentation slides.

Team Video Link

Our team developed a short video to present our journey through the Design Thinking process and our prototypes for ReSTORE. We created our video to convey our personal story on how the Design Thinking process guided us as we debriefed, collaborated, and ideated. We wanted our video to be clear, engaging, and inspiring, as well as provide the audience with takeaways as to why student, faculty, and administrator engagement is critical for the continued progress of ReSTORE. Please take note of the call to action at the end and join the discussion!

Please [click here to view our video](https://youtu.be/hesbi9B8w6o):

<https://youtu.be/hesbi9B8w6o>

Team Written Narrative

Everyone has different reasons for attending college. For some, college is an opportunity to leave their hometown and see something new. For others, the goal is to get a degree and have access to more career paths. Some go simply because it is the next step people seem to take in life. Sometimes, the reasons are all of the above. And in a few cases, the choice is driven by a passion to learn how to make a difference.

Our Beginning

For us, as an interdisciplinary team of students in “Design Thinking to Meet Real World Needs,” the common thread is this passion to make a difference. We believe something must be done to tackle the wicked problems of this world. And we know we’ll need a diverse set of skills in order to drive change. Design thinking, as a collaborative problem-solving process, provides a host of such skills.

Our team came together around this desire to explore a new problem solving process. Scott is a senior majoring in urban planning. Casey is a junior majoring in sociology. Selina is a senior majoring in liberal studies. And Joanna is a non-traditional student who works in the GVSU College of Education. We also took a Myers-Briggs personality test to become more aware of how we each engaged with the world. It turned out, we were all introverts. But we differed in the thinking/feeling and judging/perception categories. Knowing our default engagement strategies allowed us to better relate to one another and determine how our strengths and weaknesses could complement one another. The diverse skillsets and interdisciplinary nature of our team was instrumental as we moved through the design thinking process.

We began with empathy. We needed to dive deep and gain a nuanced perspective around what our stakeholder was facing. The stakeholder was ReSTORE, the GVSU student food pantry run by the Women’s Center. So we created a stakeholder map of all the entities, individuals, groups, and organizations that might use, influence, and impact ReSTORE (IDEO.org, 2015, p. 77). From there, we identified specific people associated with these areas and engaged them in dialogues. These ethnographic interviews served as a major area of research and provided extensive insights. We also gathered secondary sources from literature and conducted observational studies (Plattner, p. 3-6).

Our Iterative Process

Through integrating our research findings with our team passion and interests, the concept of “satisfaction” with the ReSTORE experience began to emerge as an area in need of innovation. Were students satisfied with the food ReSTORE provided? Were they satisfied with the meals they prepared using that food? What could ReSTORE do to increase this satisfaction?

Moving through the design thinking process helped make us aware of our own assumptions. As we became more aware, we were able to work past our assumptions and minimize the impact they had on our project. We kept ensuring our progress was based on insights from research, not preconceived perceptions (Sunstein, 2006, p. 198-200).

We started defining our problem statement based on the insights we gathered. And we gathered more insights from stakeholders with expertise and experience with our focus area (Isaacs, 1999, p. 9). This iterative cycle led us to our final problem statement:

We will help ReSTORE provide students with enhanced tools to make healthy food decisions.

This statement is multi-faceted and deliberately emphasizes retaining student agency. Through our research, we determined that students using ReSTORE preferred quick, grab-and-go food options. These foods are not always the most nutritious. Part of ReSTORE’s mission is to ensure students are able to obtain the nutrition they need in order to succeed as students. We focused on this aspect of the organizational mission to drive our ideation, the next step in the design thinking process. The ideation process began by converting our insights into need statements.

- Students need quick and easy food options
- Students need real-time information about the food/supplies in ReSTORE
- Students need methods to know about events offering free food
- Students need the autonomy and tools for making healthy food decisions
- ReSTORE and students need a better method to communicate

Our Prototypes

Crafting action-oriented statements enabled us to start brainstorming potential solutions to our problem statement. We arrived at five potential solutions:

1. Mobile application to disseminate food availability needs/nutrition information
2. Recipe book to help students prepare meals with ReSTORE food
3. Annual event in conjunction with a ReSTORE food drive
4. Protocols for distributing leftover food from campus dining/catering services
5. Partnership with community farms as a source of fresh produce

From these, we selected the two that would best address the needs of our stakeholder and most fully aligned with our derived insights. The most essential insights informing our ideation work included the following:

1. GVSU students found campus apps useful and use them frequently
2. There was a strong interest in easy-to-access information about food preparation and nutrition
3. ReSTORE needs to raise awareness about its presence and can do so by broadening its appeal to a wider array of students

With these findings at the forefront of our ideation work, two possible prototypes emerged, highlighting the value of creating:

1. A mobile application to disseminate food availability needs/nutrition information

2. Protocols for distributing leftover food from campus dining/catering services

We re-engaged stakeholders to present these ideas, and based on the positive feedback for both, we decided to combine them. We ideated around a mobile application that would increase transparency, provide nutrition information, and reduce food waste by notifying ReSTORE guests about leftover food.

Following the design thinking process, the next step was to create a prototype. No one in our group has sufficient computer skills to build an actual mobile app. Therefore, we relied on a visual representation of what the app could look like and what features it would display.



Figure 13. App home screen.



Figure 14. Announcements page.



Figure 15. Real-time inventory information.

Figure 13, branded with ReSTORE’s logo, shows the home screen. This screen will increase recognition of the ReSTORE brand. The home screen also features announcements, such as food needs, food availability, new resources, and any other relevant information.

Figure 14 shows the announcements page and the introduction for the food nutrition portion of the app. This section will encourage students to explore ways they can make healthy food decisions. The app will combine information from food nutrition experts and advice and recipes from GVSU students. We want the students to retain agency about food decisions and avoid only “top-down expert” advice services. From our research, it is very important for students to retain a voice. Students will be able to submit their own recipes, ask questions, and respond to questions from other students.

The app also will meet the need for providing students real-time information about ReSTORE’s available inventory. Figure 15 shows a Google Sheet that ReSTORE staff and

volunteers can update based on what is in stock. Guests can check this sheet and plan their shopping accordingly. Potential donors can also check this sheet to see which items need to be replenished. ReSTORE can send out notifications letting donors know the immediate needs.

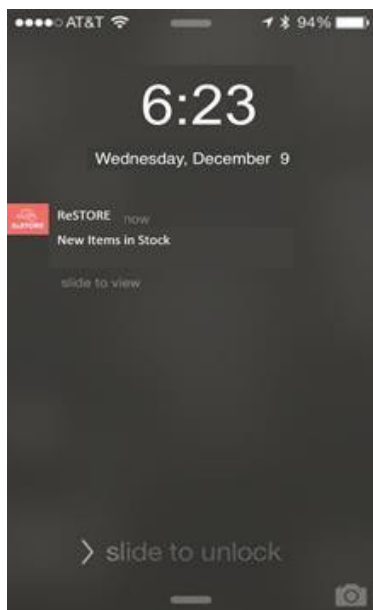


Figure 16. Push notifications to app users.



Figure 17. We need your input!

Figure 16 shows the app notification feature. This feature can be used to let students know about new inventory, especially items that have a limited shelf life. In addition, guests can be notified if there is a source of prepared food leftover from a campus catered event or dining services. Due to liability concerns ReSTORE is not able to move these leftovers to their space, and the leftovers often go to waste even though there are hungry students who would definitely appreciate them. The app would help solve this problem by side-stepping liability concerns, as ReSTORE can send a news blast through the app letting guests know where leftovers are available and the students could pick it up themselves.

Our Collective Future

Now we ask that others join us in making this app a reality. We ask that students, faculty, and staff provide input about the features they most desire in such an app. And we ask them to test the product and suggest revisions (Figure 17). Perhaps a GVSU computer science class can take up the charge and create an app for ReSTORE. Essentially, we want those with the skills needed to develop this app to help bring it to fruition by utilizing their professional skills as well as the design thinking process to determine the best highest priority features. Empathizing with the stakeholders will support the need to retain student agency and influence the design.

Ultimately, we want GVSU students to be able to focus on academics instead of hunger pangs. We want students to feel comfortable using ReSTORE as a source of food. And we want ReSTORE to become a resource about what to eat to stay healthy so all GVSU students can succeed.

References

1. College and University Food Bank Alliance. (2013). *About*. Retrieved from CUFBA Web site: <http://www.cufba.org/about/>
2. Gaines, A., Robb, C. A., Knol, L. L., & Sickler, S. (2014). Examining the role of financial factors, resources and skills in predicting food security status among college students. *International Journal of Consumer Studies*, 374-384.
3. IDEO.org (2015). *The Field Guide to Human-Centered Design* 1st Edition, doi: 978-0-9914063-1-9
4. Isaacs, W. (1999). *Dialogue: The Art Of Thinking Together* New York, NY: Doubleday
5. Jyoti, D. F., Frongillo, E. A., & Jones, S. J. (2005). Food Insecurity Affects School Children's Academic Performance, Weight Gain, and Social Skills. *Community and International Nutrition*, 2831-2839.
6. Michigan State University Food Bank. (2014). *Overview and Mission*. Retrieved from MSU Food Bank: <http://foodbank.msu.edu/about/overview-and-mission>
7. Plattner, H. (2010). *An Introduction to Design Thinking PROCESS GUIDE* Institute of Design at Stanford.
8. Song, J. (2015, August 3). *Higher Learning Rise in college food banks linked to the economy and campus demographics* . Retrieved from Los Angeles Times Web site: <http://www.latimes.com/local/education/la-me-higher-learning-food-20150803-story.html>
9. Sunstein, C. R. (2006). Deliberating groups versus prediction markets (or hayek's challenge to habermas). *Episteme*, 3(3), 192-213. doi:10.3366/epi.2006.3.3.192
10. United States Department of Agriculture. (2015, September 9). *U.S. food security: Before and after the Great Recession*. Retrieved from United States Department of Agriculture Economic Research Service: <http://www.ers.usda.gov/data-products/food-security-in-the-united-states/interactive-chart-food-security-trends.aspx>

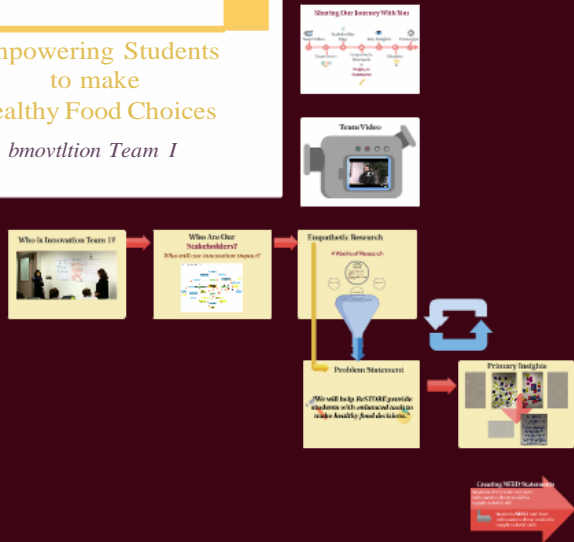
Attachment A –
Presentation Slides

Discussion & Dialogue

Innovating STORE:

Empowering Students to make Healthy Food Choices

bmoviltion Team 1



HELP WANTED!
ANY and ALL experience levels and positions wanted!

Our Prototype
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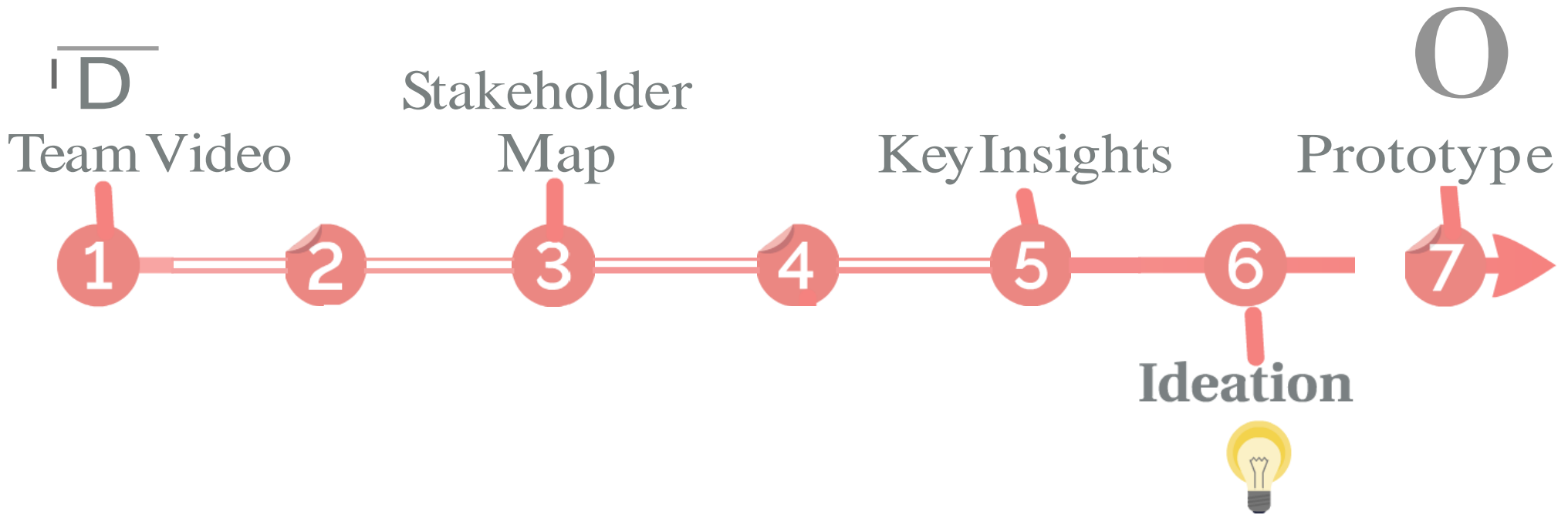


Innovating ReSTORE :

Empowering Students
to make
Healthy Food Choices

Innovation Team 1

Sharing Our Journey With You



Team Intro

Empathetic
Research
&
Problem

Statement





You Tube

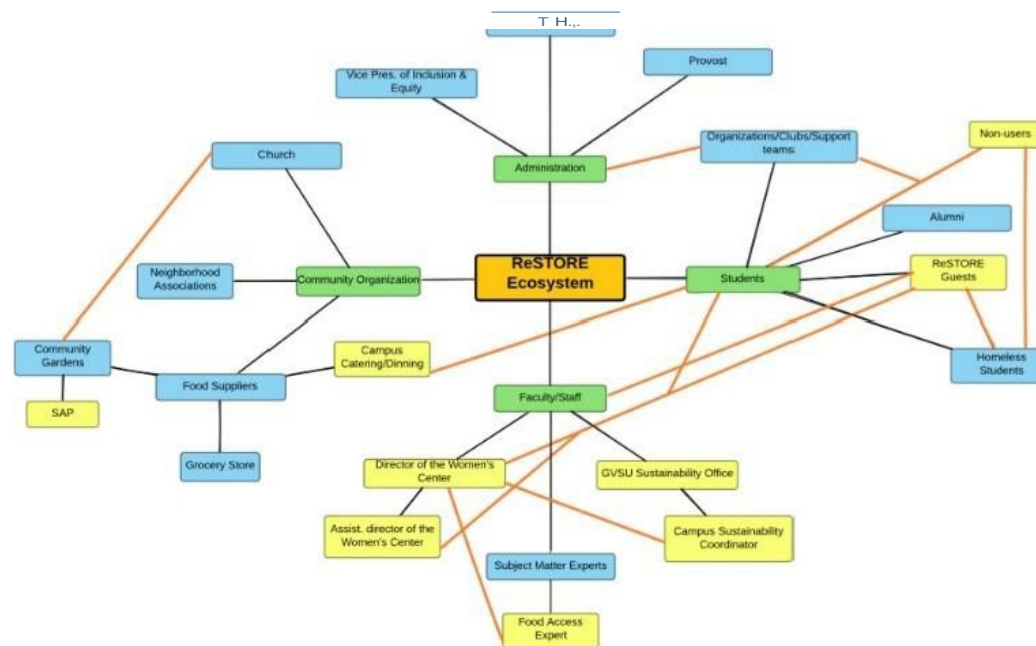
Who is Innovation Team 1?

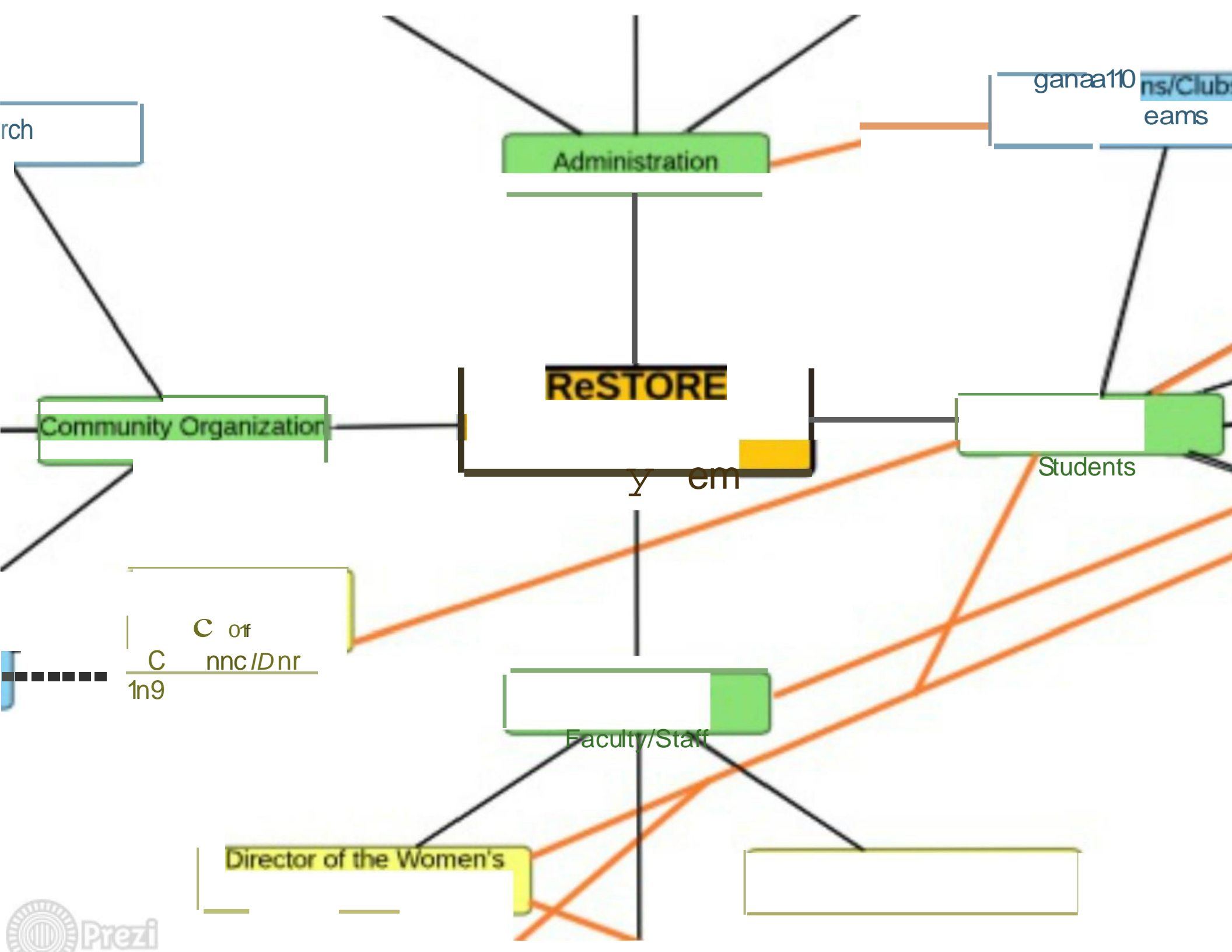


Who Are Our Stakeholders?

Who will our innovation impact?

RESTORE STAKEHOLDER MAP





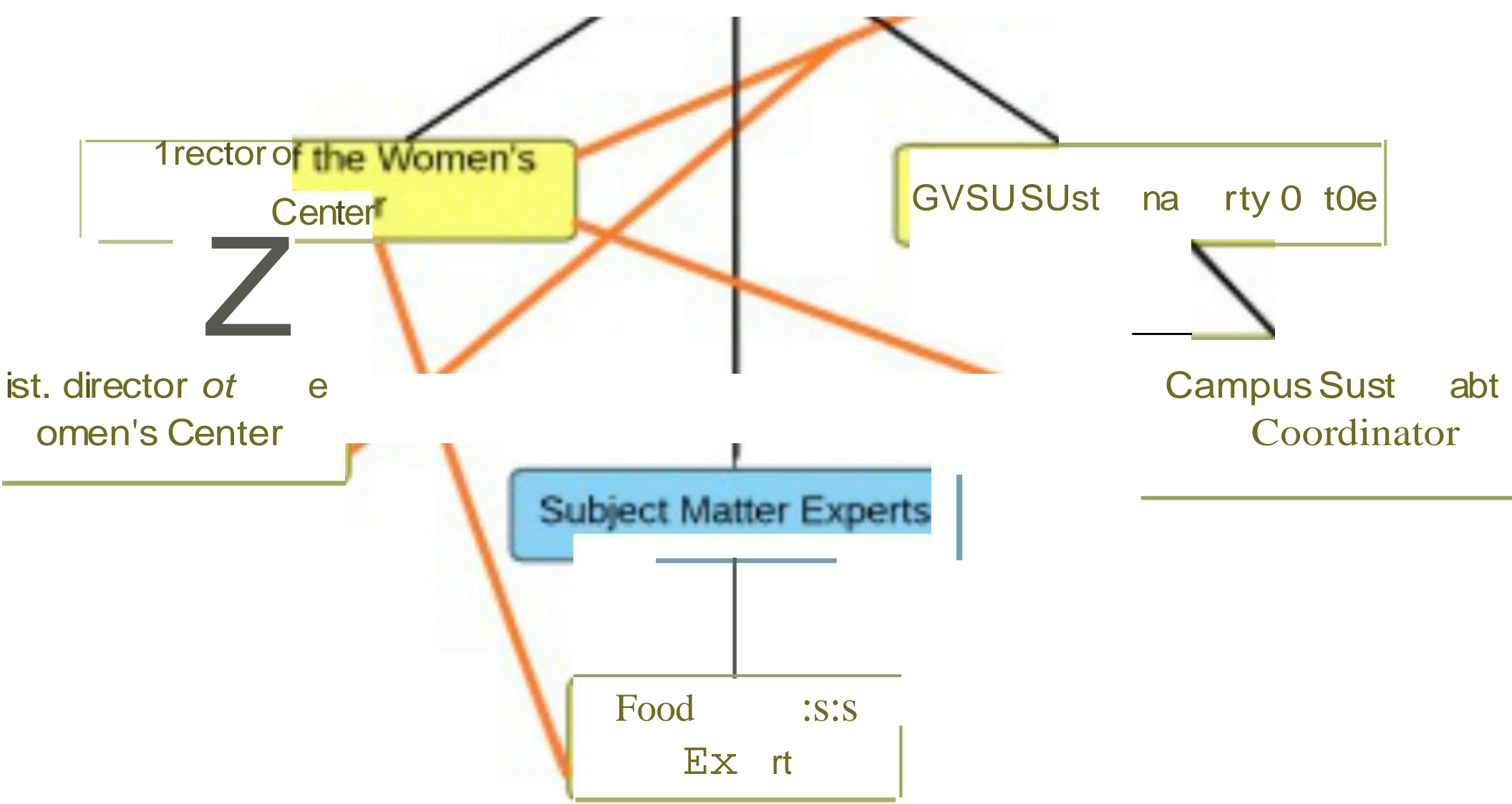
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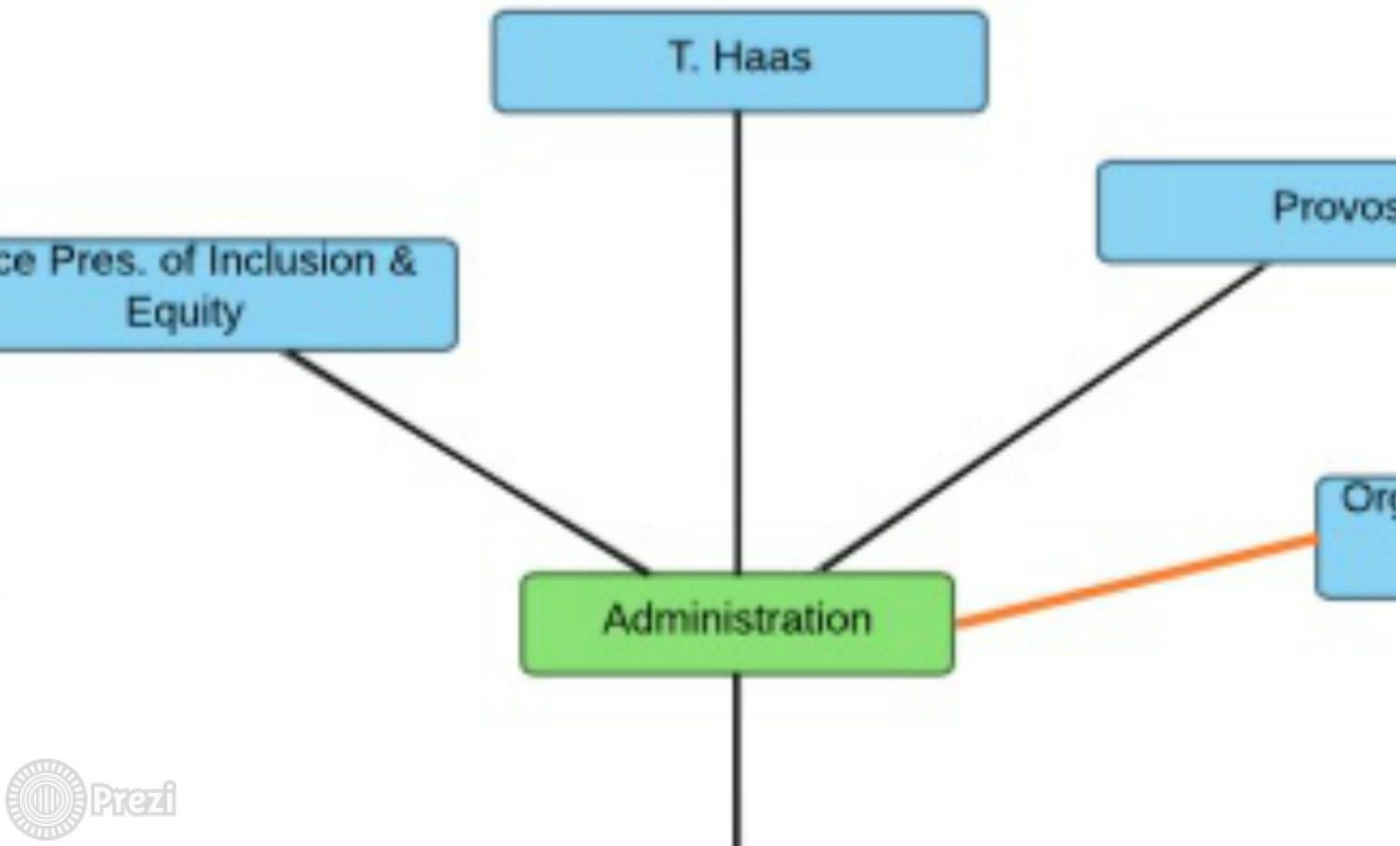
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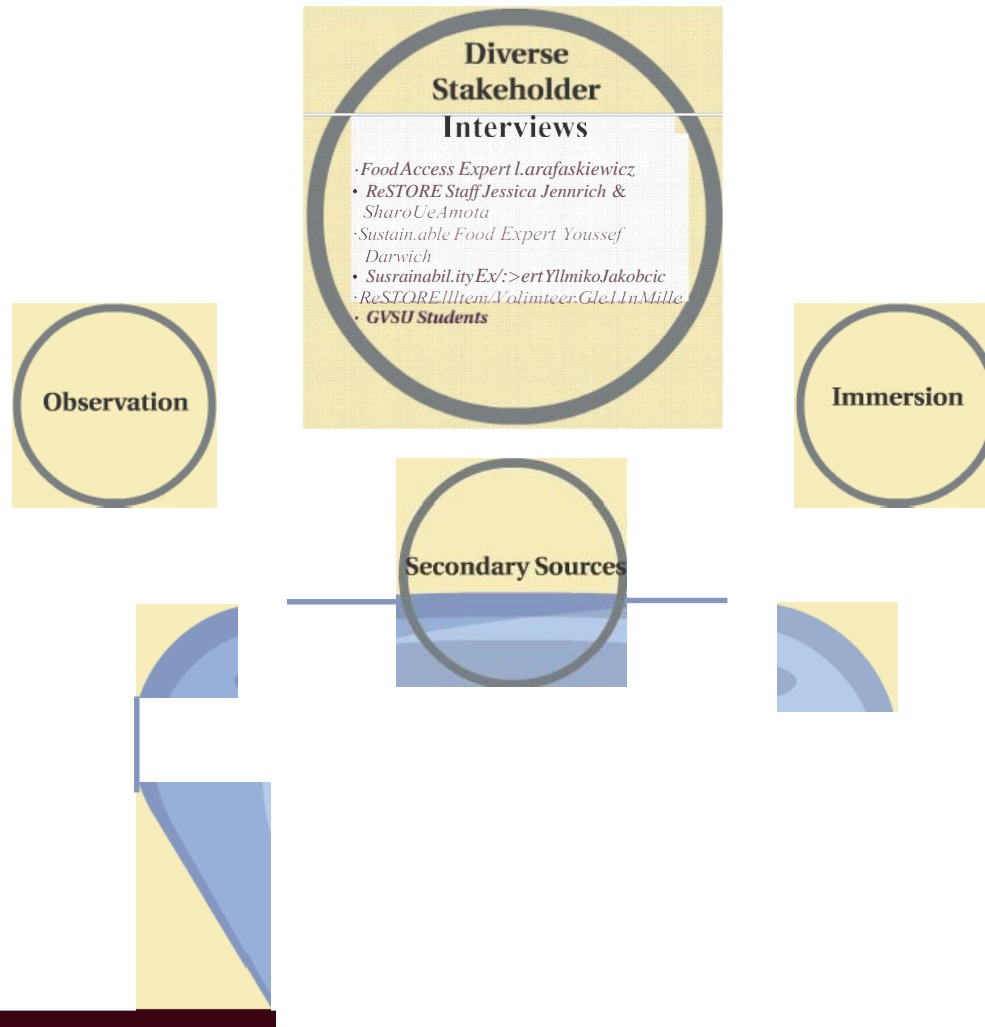
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Empathetic Research

4 Weeks of Research




Diverse Stakeholder Interviews


- *Food Access Expert Lara Jaskiewicz*
- *ReSTORE Staff Jessica Jennrich & Sharalle Arnold*
- *Sustainable Food Expert Youssef Darwich*
- *Sustainability Expert Yumiko Jakobcic*
- *ReSTORE Intern/Volunteer Glenn Miller.*
- *GVSU Students*



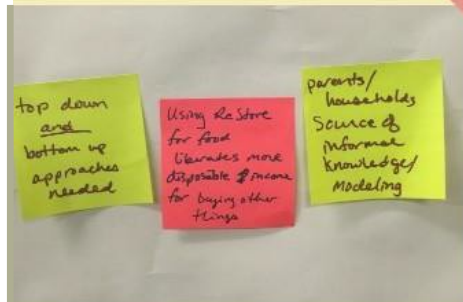
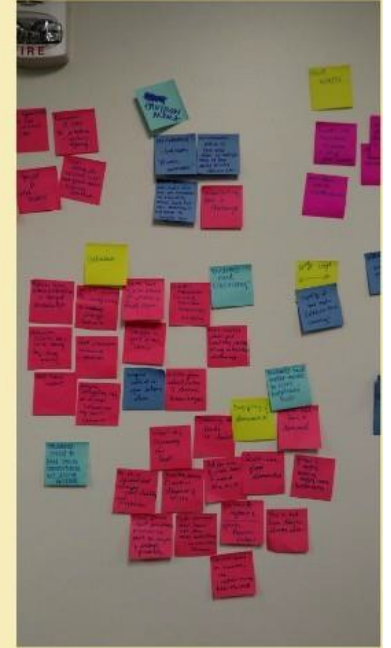
Problem Statement



"We will help *ReSTORE* provide students with *enhanced tools* to make *healthful decisions*."



Primary Insights



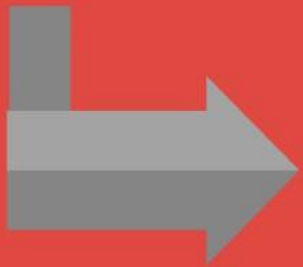
Key Insights

1. GVSU students use GVSU apps
2. Strong interest in easy-to-access food information (way to stay informed)
3. Free food = motivation for students to attend events (get students into a space & get their attention)

Team 1

Creating **NEED** Statements

Students don't have *real-time information* about available supply in ReSTORE

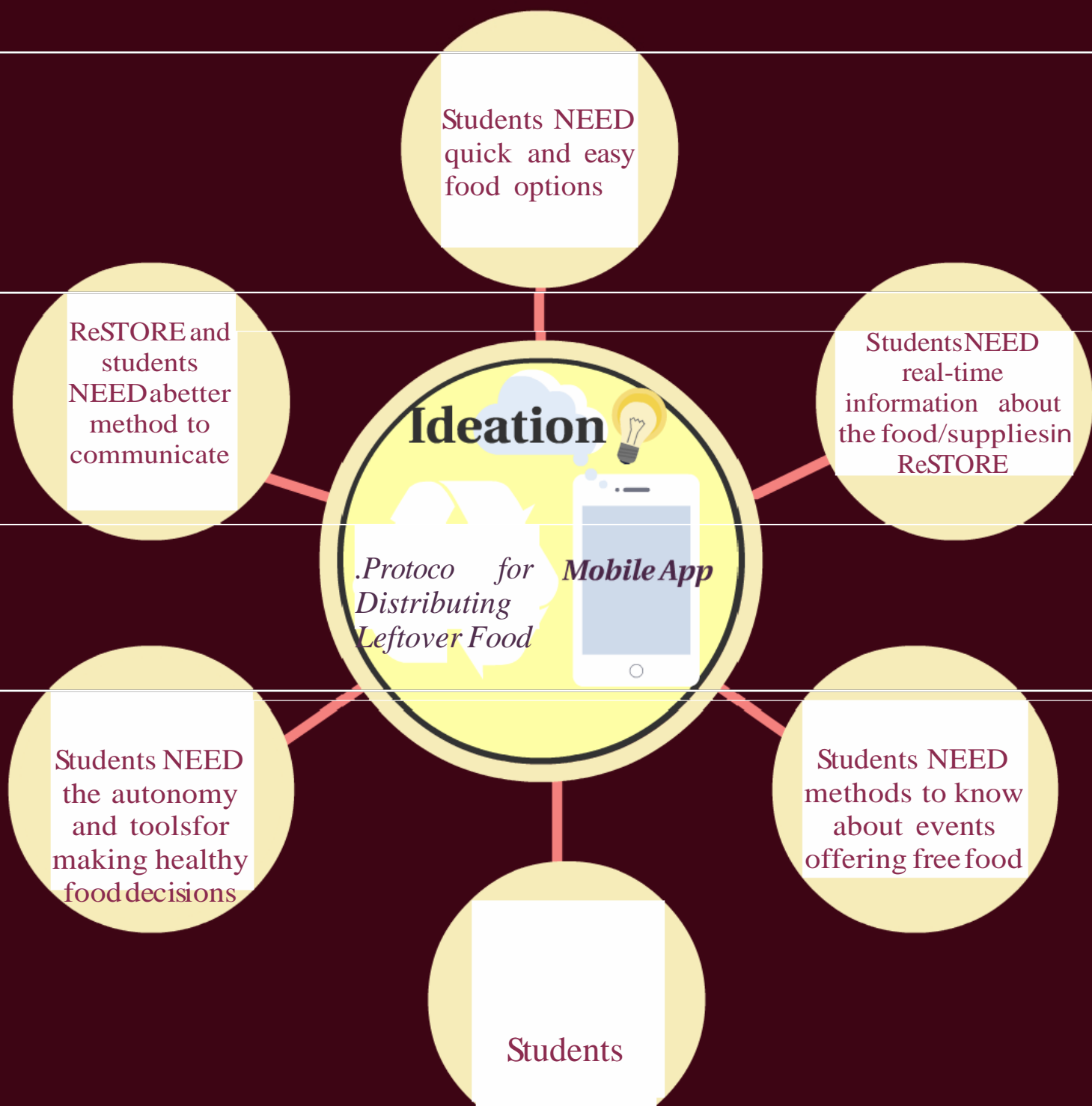


Students **NEED** *real-time information* about available supply in ReSTORE

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Time available



NEED more

food literacy

Students **NEED**
quick and easy
food options

ReSTORE and
students
NEED a better
method to
communicate

Students **NEED**
01 methods to know
about events
offering free food

Students **NEED**
the autonomy
and tools for
making healthy
food decisions

Students **NEED**
real-time
information about
the food/supplies in
ReSTORE

Students
NEED more
food literacy

Ideation:

*Protocols for
Distributing
'Leftover flood*

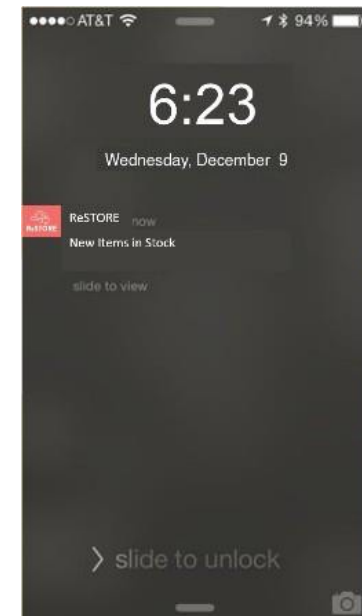
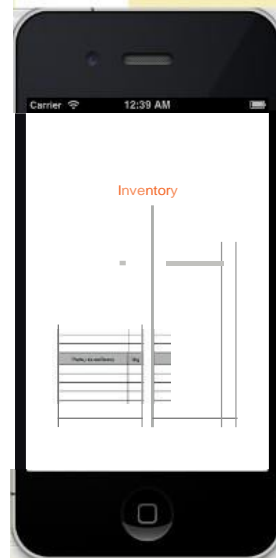
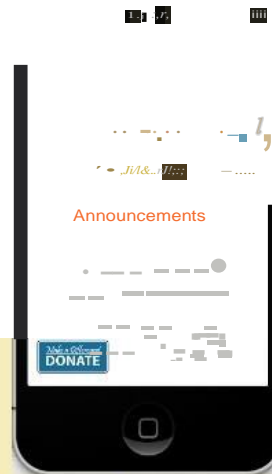
Mobile App



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Our Prototype

Figuring out the details



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quick and easy
food options

Students **NEED**
real-time
information about
the food/supplies in
ReSTORE

Ideation 

*Protocols for
Distributing
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MobileApp



ReSTORE and
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Students **NEED**
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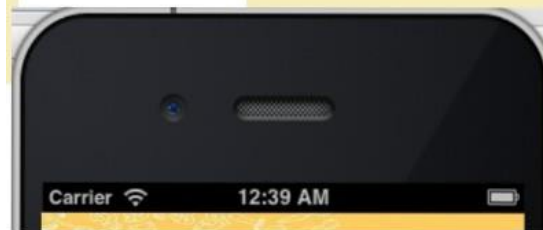
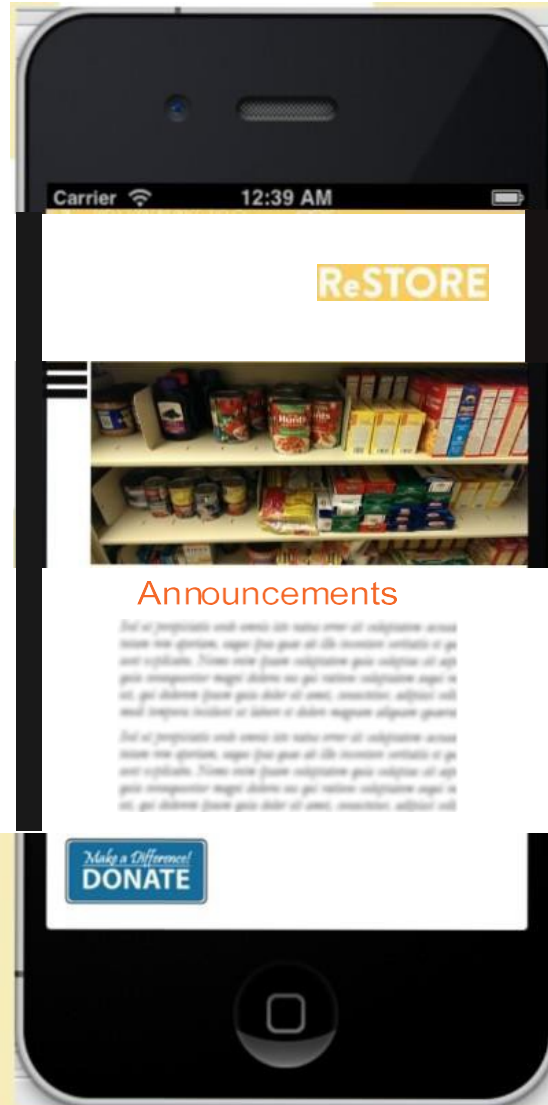
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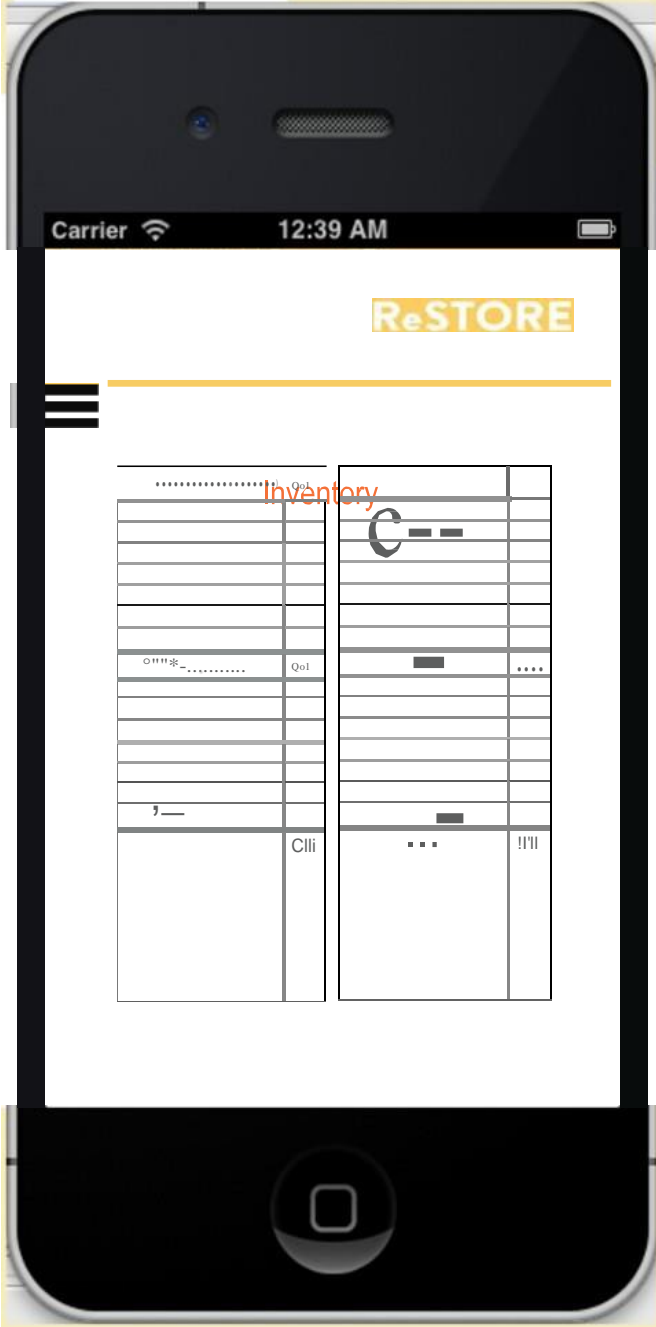
Students

NEEDmore



Figuring out the details





ReSTORE

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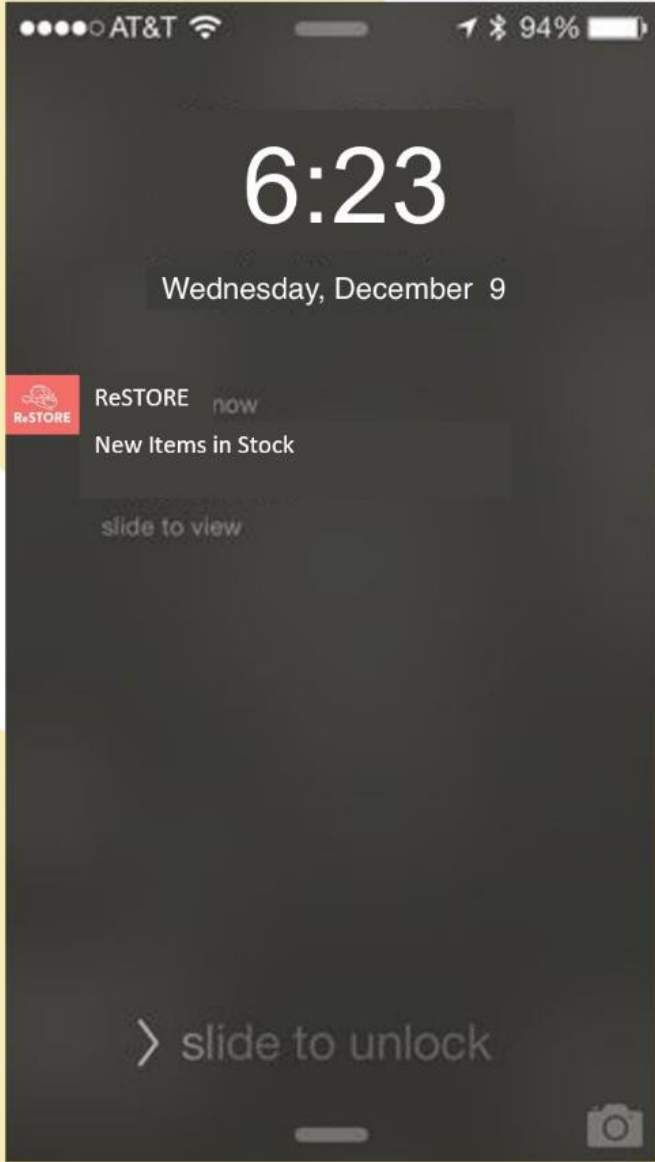
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HELP WANTED!

ANY and ALL experience
levels and positions -wanted!

Discussion & Dialogue

Empowering Students to make Healthy Food Choices

Innovation Team 1



HELP WANTED!
ANY and ALL experience levels and positions wanted!



When we talk about...
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Discussion & Dialogue

1. What insights do you have about ReSTORE or similar services that could help us better our prototype?

2. Are you aware of any apps that serve a similar function to the one we want to create? What are the strengths/ opportunities for growth it presents for us?

3. What expertise and skills could you provide ReSTORE in the production of this prototype? How can you get involved?

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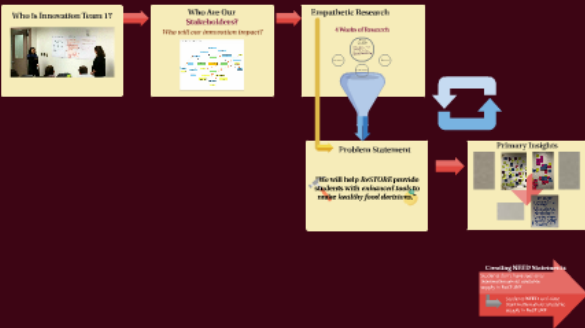
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Discussion & Dialogue

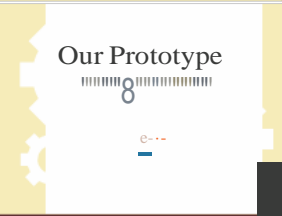
Innovating **BeSTORE**:

Empowering Students
to make
Healthy Food Choices

Innovation Team 1



HELP WANTED!
ANY and ALL experience levels and positions wanted!



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