**Results & Discussion**

### User Evaluation

#### Environment

Table with grocery items was set up outside of the Alliance Martial Arts Center in Sandy Springs, GA.

#### Participants

- Six total participant pairs
- Three boys with parents
- Three girls with parents
- Kids were ages 7 to 11

#### Procedures

1. Team members were introduced to class.
2. The parents and children were told the purpose of game and given instructions.
3. Authorization forms completed by parents.
4. The children played the game while screen was being video taped.
5. Post-test questionnaires were completed.

**Mission: Encourage healthy lifestyle habits in children for the prevention and treatment of obesity.**

**Summary**

Childhood obesity in the United States has already reached epidemic proportions with 17% of children being classified as overweight (Huang and Horlick, 2007). The impact of obesity is great because obese children are less likely to exercise and are more likely to have high blood pressure, which in adulthood have shown to correlate with heart disease, stroke, and diabetes in middle adulthood (Friedman et al., 1999). The best ways to help children attain and maintain healthy weight is through physical activity (Dietz, 1995) and nutritious eating habits. Our design addresses nutrition directly teaching children the ways of healthy eating habits early through an interactive game in the grocery store.

**Usability Guidelines**

While all of the usability principles are important to the development of our system, the principles in the chart below are most critical.

<table>
<thead>
<tr>
<th>Flexibility</th>
<th>Learnability</th>
<th>Robustness</th>
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<tbody>
<tr>
<td>Dialog Initiative: Pre-emptive designs. Children initiate most of the interactions.</td>
<td>Familiarity: Faster learning if association with existing games and child devices. Predictability: Clear and visible functions and input/output to help form a complete conceptual model.</td>
<td>Presented with only relevant information on each screen. Responsiveness: 7-11 years old are energetic and lose interest quickly hence the system time is very quick. Recoverability: Fine motor movements not yet perfected in 7 to 11 year-old children, hence motor errors are reversible. Easy to maintain.</td>
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<td>Task migrability: Burden of memory is off of the children in the system. Customizability: Interfaces &amp; information are adaptable for users of different ages.</td>
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**Observations**

- Three children hesitated before pressing the first “Match” button
- Button needs clearer label
- One child tried to press the speech bubble to go on
- Buttons must be distinctly unique from other elements
- No one consistently used the “Learn More” button
- Education information must be presented elsewhere
- Children appeared eager to please
- Children may not have been provided honest feedback

**Questionnaire for Kids**

- Only one child reported learning new information
- Need new way of presenting nutritional facts
- All children reported that they “liked the game” or “liked it a lot”
- Game must be very fun for them
- One older child reported the game being “kinda hard” while one older child reported the game being too easy”
- Need varying difficulty for different ages
- All children responded that they “would play again”
- Children must have enjoyed playing
- All children had computer experience
- We can continue to explore use of technology in learning

**Questionnaire for Parents**

- Five parents believe that the game would benefit their child
- All would let their children play while shopping
- Four parents said that it would make their shopping experience easier

**Kids: What would make this game better?**

- “Make contents harder”
- “Something that is less obvious”
- “Searching for unhealthy food as well as the good stuff would help make choices”

**Parents: Likes and dislikes of game**

- “Fun”
- “Easy to use and my child liked it”
- “I like the idea of healthy food choices. In this day and age it is important to start good habits early”

**Conclusion**

We believe that the Grocery Hunter has high potential for market success. In our study, children enjoyed playing the game and the parents believed that it would benefit them. Our findings have also highlighted the scope for improvement. Once the design issues are solved, our game could significantly impact childhood obesity through teaching nutritious eating habits.