Grocery Hunter

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User Evaluation

Environment

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



Participants

Each child was supervised by their parent.

- 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 and children.
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 (Freedman 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.

Users

Primary: Children from 7 to 11 years old.

Secondary: Parents, grocery store managers, health care providers.

Tertiary: Investors, relatives.

Facilitating: Health care providers, design team.

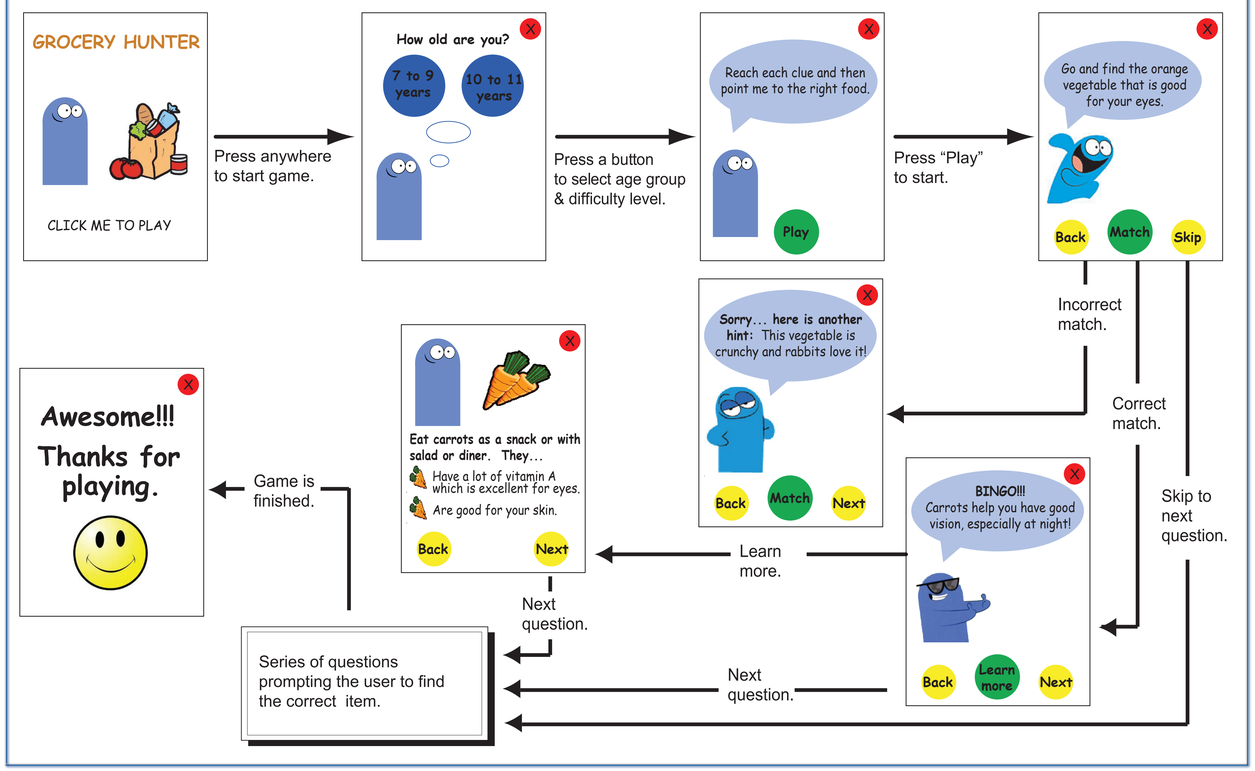
Usability Guidelines

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

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

References:
- W. Dietz, "Childhood obesity," Child health, nutrition, and physical activity, 1995.
- D. Freedman, W. Dietz, S. Srinivason, and F. Berenson, Pediatrics, vol. 103, p.1175, 1999.
- T.-T-K Huang, M. N. Horlick, "Trends in Childhood Obesity Research: A Brief Analysis of NIH-Supported Efforts," in The Journal of Law, Medicine, and Ethics, vol. 35, issue 1, p. 148-153, 2007.
- R. Whitaker, J. Wright, M. Pepe, K. Seidel, and W. Dietz, "Predicting obesity in young adulthood from childhood and parental obesity," New England Journal of Medicine, vol. 337, p. 869, 1997.

Grocery Hunter Control Flow Diagram



Results & Discussion

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 younger 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

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"

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

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.