

Know Your Audience: Designing a Nutrition Education Game for Middle School Kids

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ABSTRACT

Background: In recent years video games have emerged as potential tools to tackle obesity. Games that use motion-sensing controllers and interfaces are often used to promote physical activity. Games are also used to impart education about diet, nutrition and health. **Purpose:** Our goal in this project is to address childhood obesity through the design, development and implementation of a video game to teach nutrition concepts to middle-school-aged children.

Methods: Our target audience is middle-school students in a low-income neighborhood in Dallas. To guide us in the game design, we collected data about students' gaming preferences through surveys, focus groups and student critiques of existing games. The survey addressed students' choice of gaming platform and frequency of game play. Through focus groups we explored their gaming preferences and opinions on game features. For the critiques, students played nutrition-themed games from the "Apps for Healthy Kids" competition and completed an open-ended survey about those games. **Results:** We collected data from 76 students (ages 12 - 15 years). 72% of them play games regularly (at least once a week) on consoles while 73% play on portable devices, 68% on computers and 62% play browser-based games. Console games were preferred by 89% of boys but only 56% of girls. The numbers were 81% & 66% for portable devices, but almost the same for computer games and browser-based games. Students preferred action games, games that allowed character customization and games that had multiple levels. Several students are turned off by strong depictions of violence. Students liked the nutrition themed games, but only one game really engaged them. They wanted the food in these games to look real and wanted more familiar food choices. **Conclusions:** Our observations and height and weight data indicate that malnutrition rather than obesity is likely a bigger problem for these children. Consoles and portable devices were the platforms of choice although there are differences by gender. The results also provide insights into what is likely to work for this audience in terms of game mechanics and

game features. The results also reinforce the need for using multiple approaches to collecting data.

KEY WORDS: Nutrition, Obesity, Games, Educational games, Middle school