Designing an Obstacle Course Game to Motivate Physical Activity among Teens

Shannon Parker
Advisor: Sonia Arteaga ○ Research Advisor: Sri Kurniawan

Purpose
- Address the overall decrease in physical activity among teenagers.
- Design and implement an obstacle-type game application on the iPhone OS that encourages physical activity in a fun and challenging way.
- Conduct a field study to examine participants’ reaction to the application and their attitudes about motivating factors to sustain physical activity.

Methods
- Provide an interactive and engaging game to encourage usage.
  - Incorporate an obstacle-based game.
  - Use the iPhone accelerometer to recognize movements.
  - Implement timed activities.
- Set up a Jungle Course game application.
  - Include two modes: Walking and Obstacle.
    - Walking mode determines the number of steps to advance to the Obstacle mode.
    - Obstacle mode includes jungle-type obstacles to complete in a timely manner to advance levels.
  - More points are given if tasks are completed in shorter amounts of time.
  - Game goals are to advance levels and obtain high scores.
- Conduct a focus group to examine participant usage.

Experiment
- Subjects played Jungle Course for 15 minutes.
- Two subjects played with a companion.
- One subject played alone.
- Application usage recorded and analyzed.

Results
- Thematic Network of the feedback from the focus group after the experiment.
- Observe and collect feedback of teenagers’ interaction and experience with Jungle Course.

Future Work
- Nonfunctional Requirements
  - Incorporate various themes (e.g., jungle, island, forest).
  - Include audio notification throughout the game.
  - Implement a physical activity log.
- Functional Requirement
  - Increase accuracy of motions detected by accelerometer.
  - Incorporate various physical activity movements.

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