

# Designing an Obstacle Course Game to Motivate Physical Activity among Teens



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## 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's reaction to the application and their attitudes about motivating factors to sustain physical activity.

## Methods

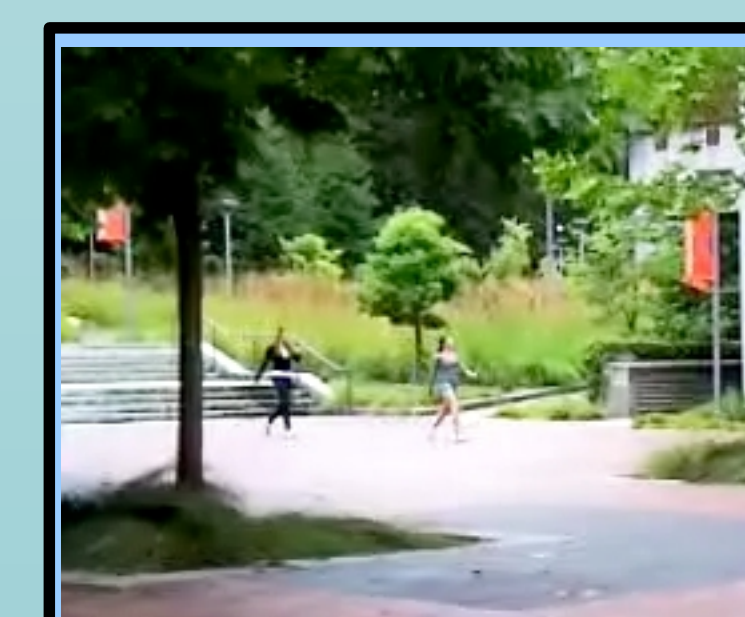
- ▣ Provide an interactive and engaging game to encourage usage.
  - Incorporate an obstacle based game.
  - Use the iPhone accelerometer to recognize movements.
  - Implement timed activities.
- ▣ Set up a Jungle Course game application.
  - Include two modes: Walking and Obstacle.
    - Walking mode determines to number of steps to advance to the Obstacle mode.
    - Obstacle mode include 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.



Jungle Course application screenshots.

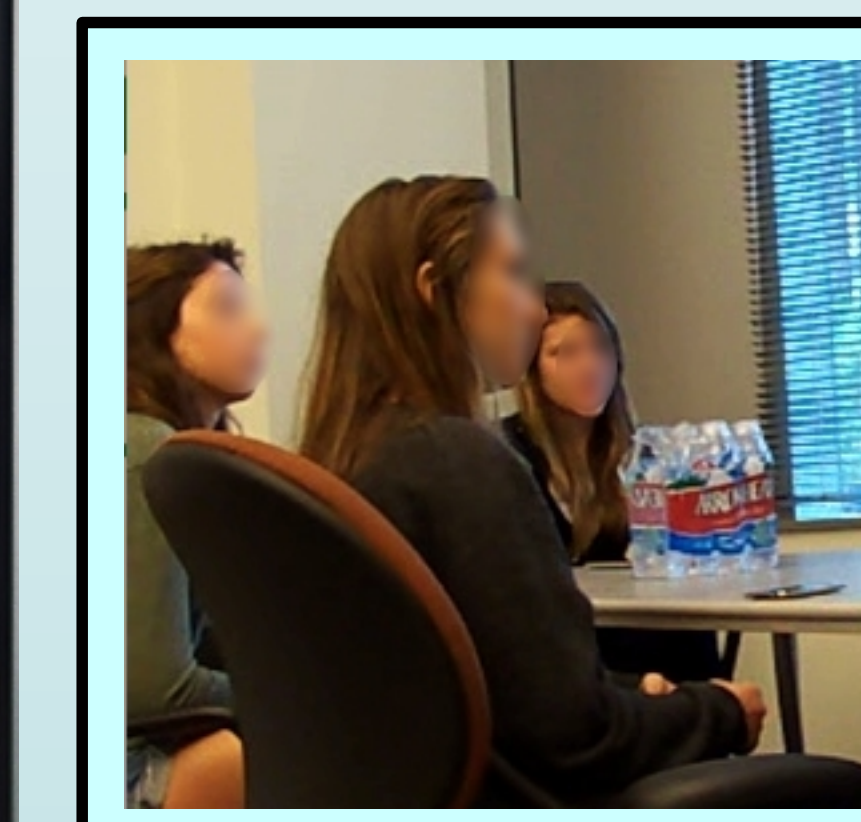
## Experiment

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

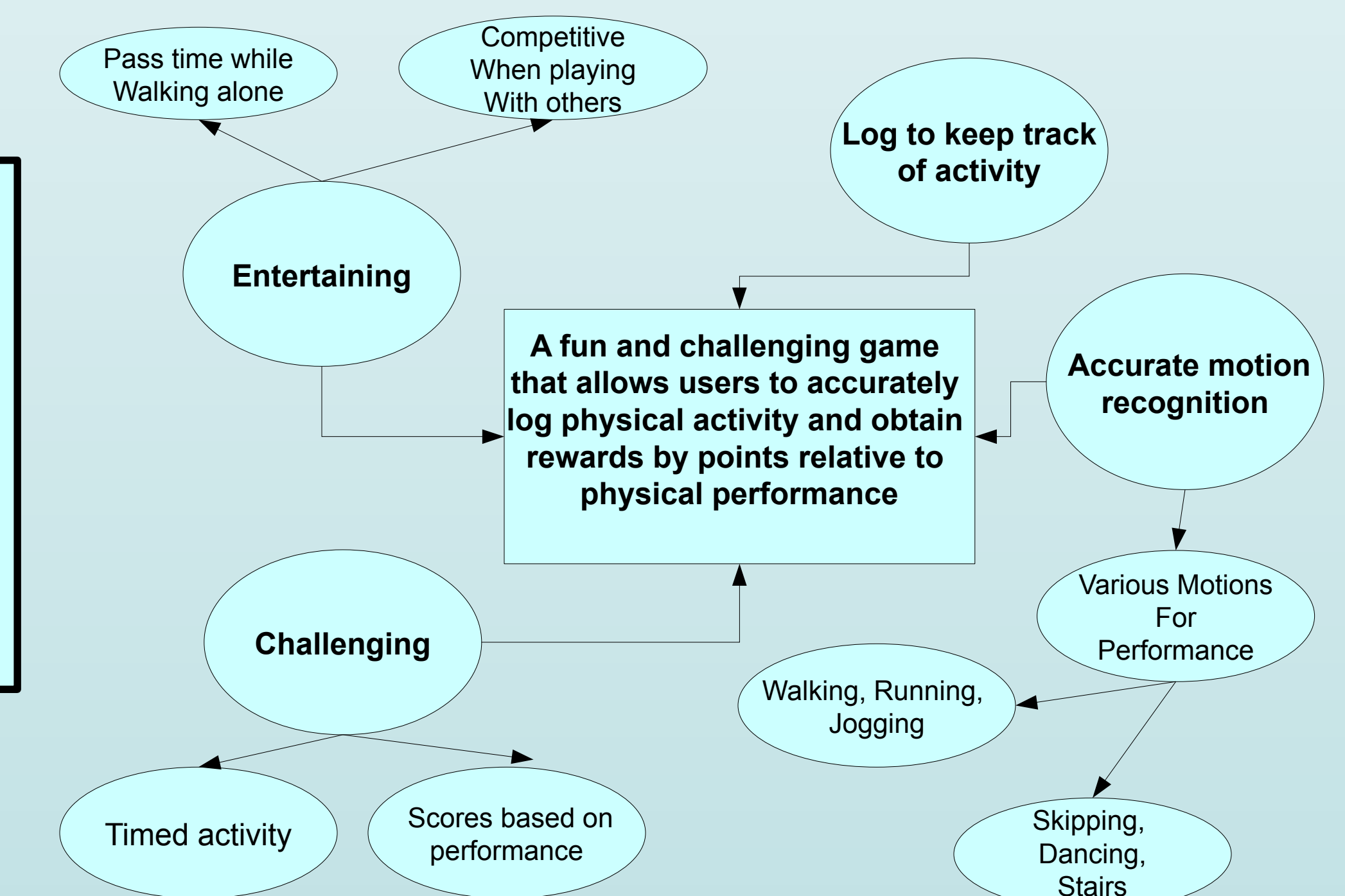


Observe and collect feedback of teenagers interaction and experience with Jungle Course.

## Results



Focus group participants.



Thematic Network of the feedback from the focus group after the experiment.

## Future Work

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

### Acknowledgment

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