Sqord and Physical Activity in the Anchorage School District

Sqord is a wearable activity-tracking device made specifically for children. It couples the device with an online platform, where children can set up avatars and challenge one another as well as track their activity levels.

Sqord awards points for various activities. Providence Alaska and the Anchorage School District have worked together to provide SQORD to teachers and students. The Institute of Social and Economic Research (ISER) is studying whether using SQORD is helping children become more active. The principal investigator is Mouhcine Guettabi.

This presentation is of preliminary findings from the first year of the study.
SQORD in ASD (a short overview)
Preliminary findings from year 1

Mouhcine Guettabi, PhD
Institute of Social and Economic Research
University of Alaska Anchorage

5/4/2016
Outline

1. Background
   - Number of SQORDs activated
   - Summary

2. Individual Level
   - How many points are students earning and when are they earning them?
   - What about variation?

3. General usage trends

4. Feedback
   - Fall survey

5. Questions?

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Premilinary results
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   - Fall survey

5. **Questions?**
Some Basics

Number of SQORDS activated by month

- September: 4,241
- October: 1,182
- November: 417
- December: 1,690
- January: 1,439
- February: 625

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Preliminary results
In the Fall of 2015, around 6,000 SQORDs were activated and distributed to 36 schools.

13 of the schools were part of a study investigating the effect of feedback on point accumulation, while the rest designed their own programs.

Another 16 schools were added in the Spring of 2016.
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The average number of daily points earned across schools is 76,889.

- Students are least active on Sundays.
- Boys earn approximately 5,000 points more per day than girls.
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Premilinary results
Points by day of the week

Average Points Earned by Day of the Week

- Monday: 77,198
- Tuesday: 78,471
- Wednesday: 78,489
- Thursday: 79,710
- Friday: 80,299
- Saturday: 75,630
- Sunday: 70,173

Activity points
Average Points Earned by Hours of the Day

- Midnight: 671.29
- 1 AM: 419.92
- 2 AM: 316.01
- 3 AM: 288.29
- 4 AM: 324.12
- 5 AM: 631.13
- 6 AM: 1,865
- 7 AM: 4,024
- 8 AM: 5,229
- 9 AM: 5,337
- 10 AM: 5,898
- 11 AM: 6,465
- 12 PM: 6,679
- 1 PM: 6,048
- 2 PM: 6,073
- 3 PM: 6,160
- 4 PM: 6,533
- 5 PM: 6,160
- 6 PM: 5,928
- 7 PM: 5,491
- 8 PM: 4,706
- 9 PM: 3,518
- 10 PM: 2,210
- 11 PM: 1,073

Activity points
Activity points by time of day

- Afternoon: 34,334
- Morning: 26,456
- Night: 20,277
- Sleep: 2,318
Activity points by time spent in school

- **In school**: 49,572 activity points
- **Out of school**: 26,099 activity points

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### How much variation is there?

<table>
<thead>
<tr>
<th>Percentiles</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
<th>90th</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 minute increments</td>
<td>117</td>
<td>838</td>
<td>1,704</td>
<td>2,676</td>
</tr>
<tr>
<td>Hour increments</td>
<td>807</td>
<td>3,913</td>
<td>6,629</td>
<td>9,498</td>
</tr>
<tr>
<td>Day increments</td>
<td>57,074</td>
<td>77,925</td>
<td>97,552</td>
<td>115,488</td>
</tr>
</tbody>
</table>

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**Premilinary results**
A bit more regarding the distribution of points earned

61% of students earn between 52,600 and 104,000 points.
How has the usage of SQORDs changed overtime?

**Number of active users by month and percent changes**

- September: 4,077, 9.71% increase
- October: 4,473, 9.71% increase
- November: 3,649, -17.48% decrease
- December: 3,011, -11.92% decrease
- January: 2,652, -20.00% decrease
- February: 2,411, -18.42% decrease
Does it look any different if we narrow it to just students?

<table>
<thead>
<tr>
<th>Month</th>
<th>SQORD users</th>
<th>Percent decline</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>3,866</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>4,211</td>
<td>8.92%</td>
</tr>
<tr>
<td>November</td>
<td>3,375</td>
<td>-19.85%</td>
</tr>
<tr>
<td>December</td>
<td>2,777</td>
<td>-17.72%</td>
</tr>
<tr>
<td>January</td>
<td>2,460</td>
<td>-11.42%</td>
</tr>
<tr>
<td>February</td>
<td>2,258</td>
<td>-8.21%</td>
</tr>
</tbody>
</table>

Ratio of Feb/Oct 53.62%
Overall points earned by month

- September 2015: 509,402,048
- October 2015: 4,665,146,880
- November 2015: 3,486,306,560
- December 2015: 2,667,236,096
- January 2016: 2,416,640,768
- February 2016: 1,879,563,136
- March 2016: 652,655,744

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In the fall of 2015, we administered a survey to schools in the Anchorage schools district who used SQORD but were not part of our ongoing study.

The survey asked teachers (both classroom and physical activity) about their impressions regarding the device, its effects on children and their general thoughts.
What role each of the following played in motivating your students?

**Booster**
- Don't know: 2.13%
- Neutral: 19.15%
- Very positive: 27.66%
- Positive: 51.06%

**SQOINS**
- Very positive: 10.64%
- Neutral: 14.89%
- Don't know: 17.02%
- Positive: 57.45%

**Leaderboard**
- Don't know: 8.51%
- Neutral: 12.77%
- Very positive: 34.04%
- Positive: 44.68%

**Avatar**
- Don't know: 8.51%
- Neutral: 8.51%
- Very positive: 40.43%
- Positive: 42.55%

**Medals**
- Very positive: 8.51%
- Don't know: 17.02%
- Neutral: 29.79%
- Positive: 44.68%

**Website Communication**
- Very positive: 4.26%
- Don't know: 25.53%
- Neutral: 25.53%
- Positive: 44.68%

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Premilinary results
How likely is it that your students are more physically active?

- Somewhat unlikely: 8.16%
- Undecided: 8.16%
- Very likely: 10.20%
- Somewhat likely: 32.65%
- Likely: 40.82%

Likelihood percentages:
- 0%
- 10%
- 20%
- 30%
- 40%
Reasons for implementation varied but most mentioned improvement of physical activity as a driver.  

- The majority mentioned their favorite aspect of SQORD is that it motivates students.
- Teachers think SQORD has the potential to increase physical activity in children.
- SQORD does not seem to be associated with negative classroom behavior.
- The Leaderboard and the Avatar are viewed as positive motivating tools.
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A quick note on the studies

- We have tested the role of feedback on physical point accumulation last fall. Preliminary analysis indicates that the lack of computer access did not adversely affect physical activity.
- In the spring, we tested the effect of general benchmarks relative to personal goal improvements.
- Next year, we are intending to look at the effect of incentives.
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Questions?
Thank You

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