Expanding Childhood Eyecare Education Through a Mobile Application

Tim Esworthy
Jared Grimm
Annalise Robidoux
Griffin Roth
One out of every twenty Armenians suffers from visual impairment.
Vision impairments can substantially reduce a child’s ability to learn.

- Armenian children suffer higher rates of strabismus and other visual disorders.
- 50% of learning disabilities are vision related.
The AECP provides eyecare education through a children’s book to increase childhood eyecare awareness.
A digital supplement to *Desunik’s Game of Sight* offers several benefits.

- Prevention measure
- Cost
- Extended audience
- Better use of time
Knowledge to transfer to students was collected and refined from four sources.
Activities were chosen based on enjoyability and educational criteria.

### Enjoyability Scorecard

<table>
<thead>
<tr>
<th>Activity</th>
<th>Elements of Enjoyability</th>
<th>Gameplay Similar to a Frequently Downloaded App</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assemble The Eye</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Protect Desunik’s Eyes</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Color-Blind Maze</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Eyelash Dash</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Eye Spy</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Convergence</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

### Activity Selection Scorecard

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description of Use</th>
<th>Quality of Criteria Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Must Have</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Pedagogy</td>
<td>Combine: students will have to recreate the anatomy of the eye to make it functional, by combining parts to see how an image is formed</td>
<td>✓</td>
</tr>
<tr>
<td>Student Motivation</td>
<td>Sounds rewarding correct placement, feedback from Desunik, and the motivation to reveal the hidden picture / improve score</td>
<td>✓</td>
</tr>
<tr>
<td>Relevance</td>
<td>Makes an eye to see an image of something they are familiar with such as famous buildings in Armenia or superheroes for younger students</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Should Have</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progress Tracking</td>
<td>A Badge can be awarded when they successfully assemble an eye</td>
<td>✓</td>
</tr>
<tr>
<td>Student Flexibility</td>
<td>Can be customized for each age group to have more or less parts to add</td>
<td>✓</td>
</tr>
<tr>
<td>Agency</td>
<td>Very short game they can complete in a small time with a phone</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Want to Have</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaboration</td>
<td>Compete with friends for better time</td>
<td>✓</td>
</tr>
<tr>
<td>Customization</td>
<td>They can experiment by placing eye parts in different places. However, only the correct configuration will be accepted</td>
<td>✓</td>
</tr>
</tbody>
</table>
Mock-up activities were brought to schools for testing.
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Assemble the Eye
Mock-up activities were brought to schools for testing.

Colorblind Maze
Mock-up activities were brought to schools for testing.

Search and Find
Mock-up activities were brought to schools for testing.

Protect the Eye
Quizzes administered before and after displayed educational growth as a result of the mock-up.
Questionnaires revealed student enjoyment and positive attitudes towards the mock-up.

- Would Play Again (90%)
- Learned Dangers to Their Eyes (94%)
- Had Fun (96%)
- Learned New Things About Their Eyes (100%)

52 Students
Observations portrayed levels of enjoyment and engagement in students.
Recommended application structure and design reflect the vision of original booklet.
Implementation Plan

1: Use developer evaluations
2: Use design document
3: Use marketing package and prospectus slides
4: Use quiz materials
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Thank You!