EyeDeal
A new way to improve your study habits using eye tracking technology

Donald Van Steenwyk, Tristan Seifert, Elnaz Marediya, Tracy Hammond, Samantha Ray

Introduction
During the COVID-19 pandemic, many students struggled with virtual classrooms. According to one study, 31% of students with ADHD learning accommodations found remote learning very challenging, compared to 18% with ADHD without accommodations. Only 4% of students with neither ADHD nor learning accommodations found remote learning very difficult.

Comparison without IEP/504 Plan

<table>
<thead>
<tr>
<th></th>
<th>0%</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comparison without IEP/504 Plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD without IEP/504 Plan</td>
<td>28%</td>
<td>45%</td>
<td>23%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD with IEP/504 Plan</td>
<td>18%</td>
<td>31%</td>
<td>33%</td>
<td>18%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADHD with IEP/504 Plan</td>
<td>7%</td>
<td>28%</td>
<td>34%</td>
<td>31%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Our system will:

- Offer real-time aid:
  - Monitor students’ focus through eye movements
  - Attention reminders
  - Report overall performance to teacher
- Offer offline aid:
  - Instructors and students can use feedback to improve and create learning strategies
- Focus on accommodating those with different educational needs
- Maintain students’ privacy
- Promote voluntary use

Prior Work

SAMSUNG

+ Look At Me app helped kids with Autism
+ Effective with 2014 phone cameras
  - No longer available

Honorlock

+ Effective at monitoring attention
  - Many students see it as unfair burden
  - May require additional proctors to detect errors

Other Academic Papers

+ Explore ways to detect attention
  - Often require expensive equipment
  - No practical solutions

Electron.js
webgazer.js
Ember.js
PostgreSQL

Methodology

No Longer Available

Evaluation

To evaluate our project, we will perform a user study in which we will test the correctness of our system, the usability of our application as well as the helpfulness of our system. We will demonstrate the effectiveness of the tool by allowing different groups of students to use our system and take guidance from the prompts while studying. We will then have the students take a quiz to measure their understanding of the lesson. Additionally, we will interview the students so they can provide additional feedback on the tool.