THE EXOSUIT, UV, AND U-TRACK

Brown Boy Summer
Sashank, Abhi, Rushabh
The Challenge 2020
June 22nd, 2020
The Problem

- Global Pandemic of COVID-19
  - 6 feet distance required
  - Schools have to shut down
  - Classrooms too small
  - Online classes not as effective
The Location

- 1024 square feet
- Physical interaction with teacher
- Conversation between students
The Suit

- Based on a scuba suit and hazmat suit
- Self-healing polymer and fabric
- Breathable plastic (consider heat and maybe fabric instead)
- One size fits all through use of expandable material
- Use of insulation factories and lasers to produce relatively cheaply
- Suit would be clear and as thin as a normal shirt
Model of the Suit

Front of the suit

Back of the suit

Facial protection of the suit

Close up of hi-tech fabric
UV Light and App

The app:

- Would be connected to student accounts
- Would utilize hardware on phone
- Store info that would only be accessible by school nurse in order to prevent HIPAA violations
- Be distributed via play store and app store

The UV light:

- Similar in appearance to already existing uv lights
- Remote control and has deployable stand
- Would be small handheld devices that give out UVC light
- Can be turned on and off
Discuss Barriers to Design Implementation

- **Cost (Suit)**
  - The cost of the material would be around 200 dollars per person
  - Cost comes from the expensive materials used to make the suit itself including the self repairing polymer.
  - Cost of actual manufacturing of the suits is cheap through use of industrial laser cutters.

- **Distribution (Suit)**
  - Vast number of suits needed in order to provide the whole country will take approximately 1.5 year.
Barriers to UV and App

- **Cost (App)**
  - Cost to develop the app/distribution of app
  - Could be funded by government or company

- **Distribution (App)**
  - Getting people to download app in order for it to be effective on the large scale
  - Concerns with privacy
  - Marketing campaign
Changes for Stakeholders

**Schools**
- Benefit as they have to pay very little
- Get to reopen during the pandemic

**Government**
- Can implement solution easily by reallocating funds
- Helps the country and education sys.

**Students**
- Can return to school
- Minimal changes to education setting
# Ethical Considerations

<table>
<thead>
<tr>
<th>Negative Impact</th>
<th>Solution</th>
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<tr>
<td>The suit itself has no real consequences ethically.</td>
<td>N/A</td>
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<tr>
<td>The app may violate privacy and medical rules.</td>
<td>The info gained from the app can only be accessed by school medical staff.</td>
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<td>The UV lights might emit harmful radiation.</td>
<td>These lights would only be used when students are not present.</td>
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Our team

Abhiram Bobba
Basis Phoenix

Sashank Padala
Basis Peoria

Rushabh Pawnikar
Basis Peoria
Discuss What You Learned and How You Worked as a Team

○ Successes?
  ■ We signed up for this competition together, and so we were able to communicate well and brainstorm before it actually started.

○ Failures?
  ■ We had slight problems with our planning as it was difficult at times for all of us to call and work.

○ What did you learn?
  ■ Working as a team is usually effective as you can come up with better and more realistic ideas with help of others.
Thanks!

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