



*Innovations in Teacher
Education and Higher Education*



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Lockheed Martin Eminent
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Hispanic
Serving
Institution



2nd Largest
University

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Lockheed Martin/UCF Academy



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THE CENTER FOR RESEARCH IN
EDUCATION & SIMULATION TECHNOLOGIES

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<https://ccie.ucf.edu/crest/>

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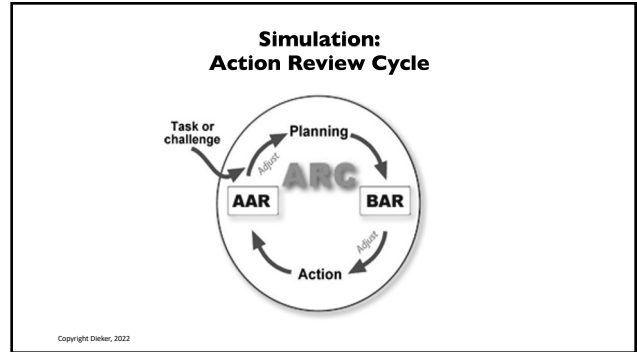
Education (PhD) - Exceptional
Education

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Conceptual Framework

- Trademark, Patent, and Other Stuff
- Project RAISE
 - Meet Zoobee
- NSF Cyberbullying
 - See example
- Debriefscape
 - Tool Website
- Reflection on your work – Q&A

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Plan to learn the following

Understanding the future of MR and AI and the importance of protecting your work

Learning about 3 projects building in AI components and biometrics

AI types of tools to consider in your teacher preparation program

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Simulated Virtual Environments





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Moving Beyond TeachLivE™ and Simulation



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Examples of AI and MR already in use

Google Translate

Google Forms

Schoolsim – also several programs in Turkey

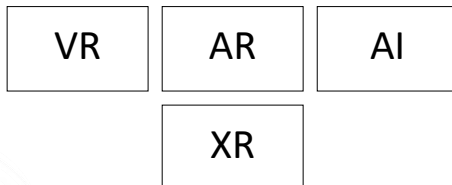
Power Point auto design

TeachLivE or Mursion

Auto closed-captioning: Zoom, YouTube, Power Point – Do you use this feature?

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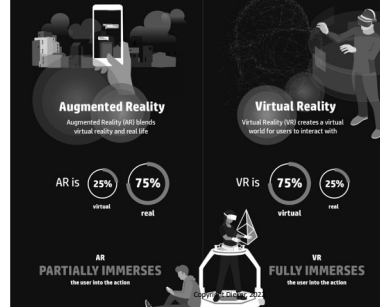
Some Basic Definitions



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AUGMENTED REALITY VS VIRTUAL REALITY



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ARTIFICIAL INTELLIGENCE OPERATION PLANNING
AUTOMATE DECISION

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The ability of a computer or other machine to perform those activities that are normally thought to require intelligence.

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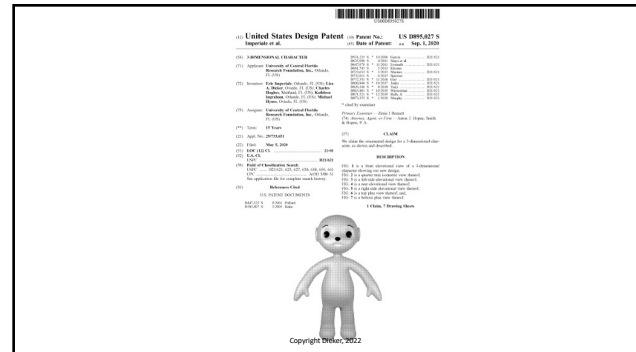
My advice

No legal experience just hard knocks

- Time without funding is your safest path
- Trademark names – do your homework TeachME
- Consider if funding is OER what you want to patent, copyright, or TM before you put into a proposal
- Befriend the person who helps with this on your campus
- When in doubt at least put your name, copyright, and year to protect your work.

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Anxiety Reduction in Simulated Environments and Sensors



US010783800B

(12) **United States Patent**
Dieker et al.

(10) Patent No.: US 10,783,800 B1
(45) Date of Patent: Sep. 22, 2020

(54) **SENSOR-BASED COMPLEXITY MODULATION FOR THERAPEUTIC COMPUTER-SIMULATIONS**

(58) **Field of Classification Search**
CPC — G09B 5/06; G09B 9/00671; G09B 9/00362;
G09B 19/00; G06K 9/00671; G06K
9/00362
See application file for complete search history.

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Research Foundation, Inc., Orlando
FL (US)

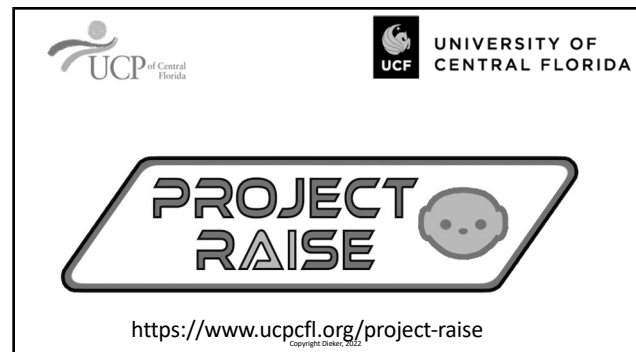
See application file for complete search history.

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Kathleen Ingraham, Orlando, FL;
Claire Donchower, Orlando, FL (US);
Taylor Bondfield, Orlando, FL (US)

U.S. PATENT DOCUMENTS		
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2017/0337742 A1	11/2017	Powderly et al.

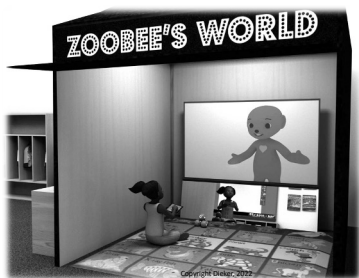
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Phase 1



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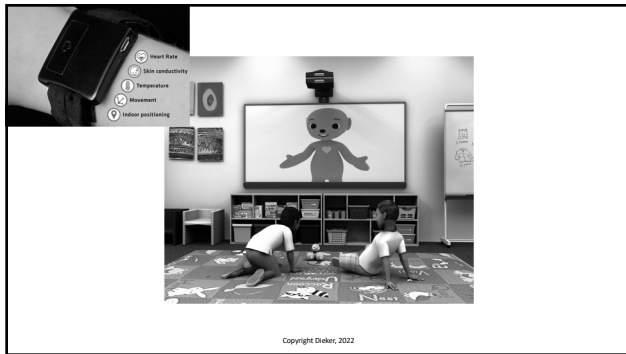
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Dash will ask for feedback from student about Zoobee

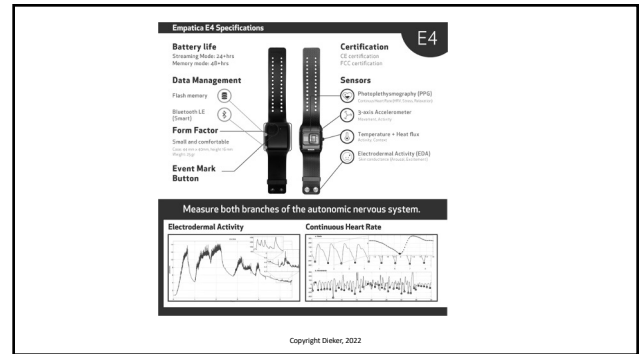


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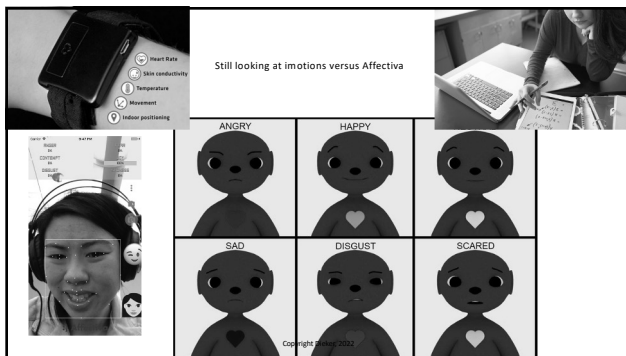
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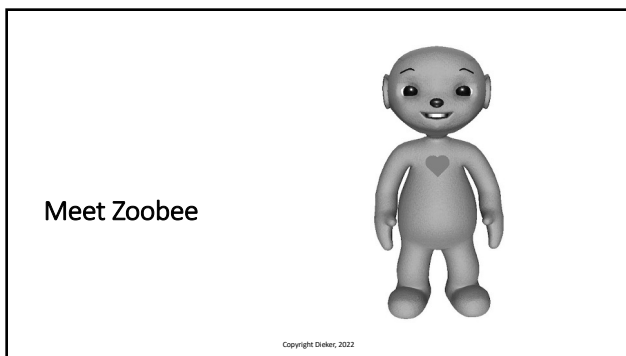
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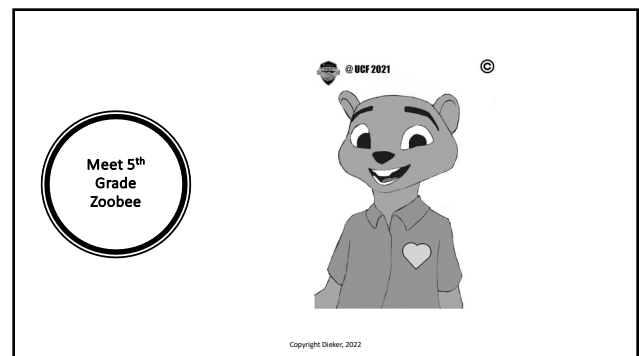
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5 Tools to Try

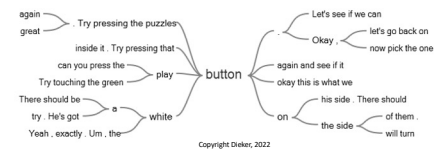
- Affdex.me app
<https://play.google.com/store/apps/details?id=com.affetiva.affdexme&hl=en&gl=US>
- Virtuali-tee
<https://www.curioscope.com/products/virtuali-tee>
- 3-D skeleton
https://play.google.com/store/apps/details?id=com.catfishanimationstudio.SkeletalSystemPreview&hl=en_US&gl=US
- Holoskype
<https://www.youtube.com/watch?v=4QIGYtd3qNI>
- Holograms
<https://blog.lookingglassfactory.com/100days/100-days-of-hologram/>
- Mood Ring app <https://apps.apple.com/us/app/aon-mood-ring/id887336356>

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How does Zoobee become AI

- Otter ai <https://otter.ai/u/leNcBcHFqggcWsyhLKkfIdgKE0>
- Biometric data – TBD -
- Analysis of phrases and patterns



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DebriefScope

Tagging Software

PD for STEM Coaches

OER STEM Toolkit

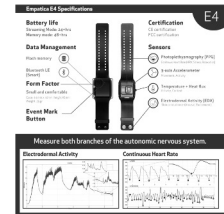


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One Area of Cross-over for the 2 Projects

- *Understanding the most effective way to collect and use biometric data for Teachers*

Project Raise: Trigger AI**Debriefscope:** Align with tagging to support objective coaching

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5 More Tools to Try

- Otter.ai <https://otter.ai/>
- Identify jobs and skills for the future
<https://www.identifor.com/>
- Voki <https://www.voki.com/>
- Blabberize
<https://blabberize.com/>
- Oddcast – <http://oddcast.com>
– text to sing

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NSF Cyberbullying



This video shows with special needs participants in a video chat.

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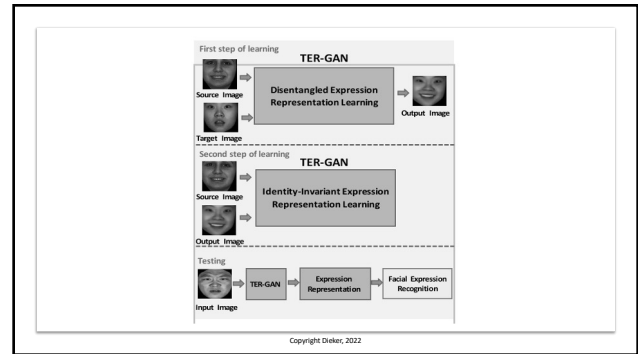
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Video can be
an MR
experience
NSF
cyberbullying

• https://www.dropbox.com/s/lvgs2gbfp5hkq66/NSF_ZoomSession.revHEAD.mp4?dl=0

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DEBRIEFSCAPE
SUITE

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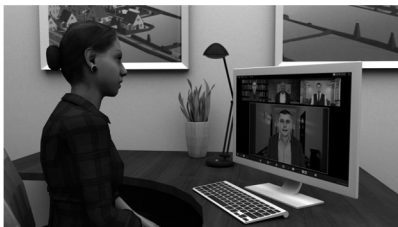
Phase 1: Create DebriefScope Toolkit Aligned with Targeted HLPs Each Year



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Phase 2: Create and Deliver STEM Coach Professional Development



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The screenshot shows the ECLKC website with the following content:

- ECLKC** logo and navigation links: About, Topics.
- Practice-Based Coaching (PBC)** section header.
- Text: "Practice-Based Coaching (PBC) is a professional development strategy that uses a cyclical process. This process supports teachers' practices that lead to positive outcomes for children. PBC occurs in the context of collaborative partnerships. View the videos below."
- Practice-Based Coaching Overview** section with a video player.
- Video player controls and a caption: "Narrator: Michelle Noelle engages".
- Thumbnail images for other videos, including one labeled "for y".

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Phase 3: Identify Goals and Data Collection



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Phase 4: Teacher Observation



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Phase 5: Reflect with DebriefScape (inclusive of biometric data if teacher selects this option)



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Phase 6: Teacher (mentee) Personalized Professional Development with DebriefScape Suite



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Website at this time

•<https://ucf.deviws.com/>

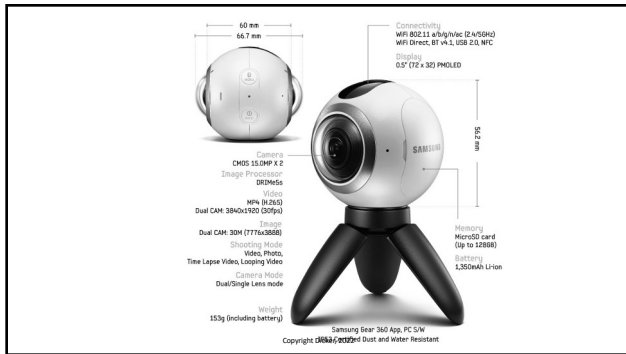
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Project-related Technology

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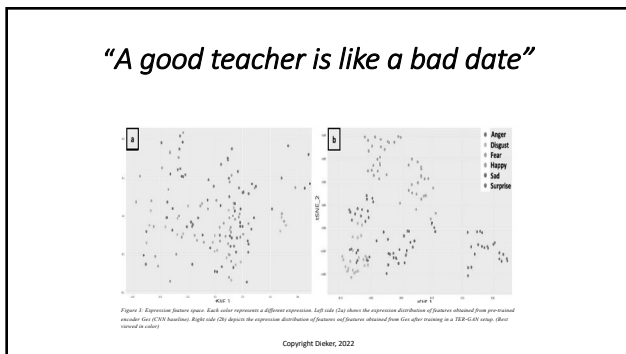
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Biometric Data Collection

- Optional heart rate data
- Potential for emotion-capture, respiration rate, and other evolving technology

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DebriefScape Suite

- OER Resources
- Personalized PD
- Data driven

DEBRIEFSCAPE SUITE

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Search Tools

- Search Bots
- Engaging and motivating
- Novelty incorporated into Web design

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DRIFT

Try Drift Chatbots

Take Drift's bot for a test drive without installing any code on your website (seriously). Enter your email and you'll see the power of Drift in seconds.

DriftBot

Hey there! So pumped you want to see what Drift would look like on your site.

You can go through this test drive right here in this chat. Just a few quick questions first...

First: What URL would you like to see Drift on?

<https://sites.google.com/rahines.com/ucfeexudergrad/home>

Reply to DriftBot

Chat by Drift | Privacy Policy

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What behaviors would you want to tag while you teach?

- How about your stress data?
- How might you use your daily biometric data?

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Exploration of new biofeedback Devices:

The Journey

- Struggle getting real-time data to trigger the AI
- Struggle getting the right device
- Struggle with cost

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Physiological Input



empatica

- Measures electrodermal activity (EDA) to indicate emotional arousal and stress. Integrates with iMotions Affective AFFDEX software.

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Empatica E4 Specifications

Battery life
Streaming Mode: 24-hrs
Memory mode: 48-hrs

Data Management
Flash memory
Bluetooth LE (Smart)

Form Factor
Small and comfortable
Chest strap, wrist, or clip-on
Waterproof

Event Mark Button

Certification
CE certification
FCC certification

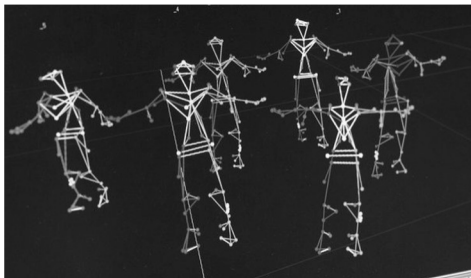
Sensors
Photoplethysmography (PPG)
3-axis Accelerometer
Temperature + Heat flux
Electrodermal Activity (EDA)

Measure both branches of the autonomic nervous system.

Electrodermal Activity

Continuous Heart Rate

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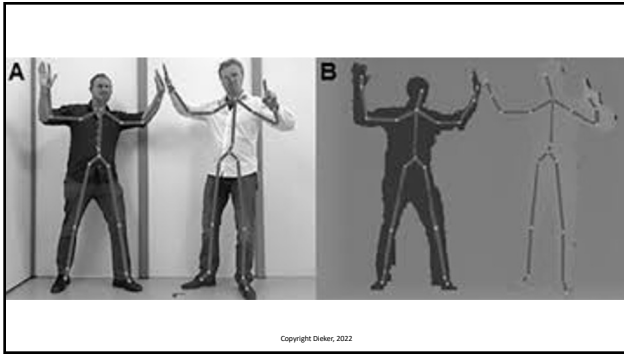
Teacher Body Language (Barmaki, 2015)

- Most teachers did not exhibit open-body postures when teaching



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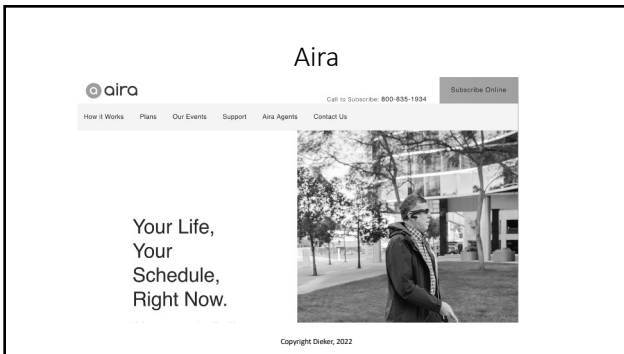
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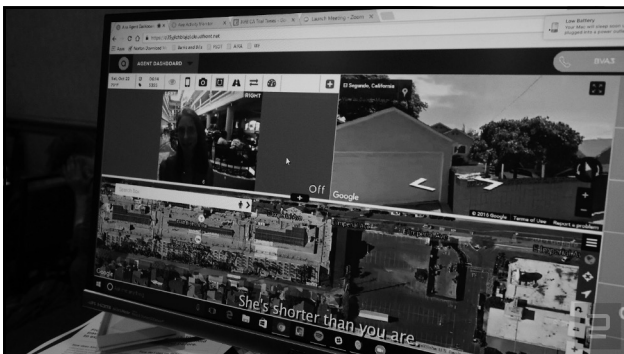
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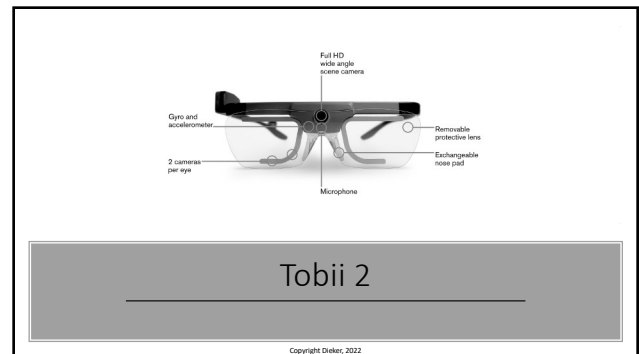
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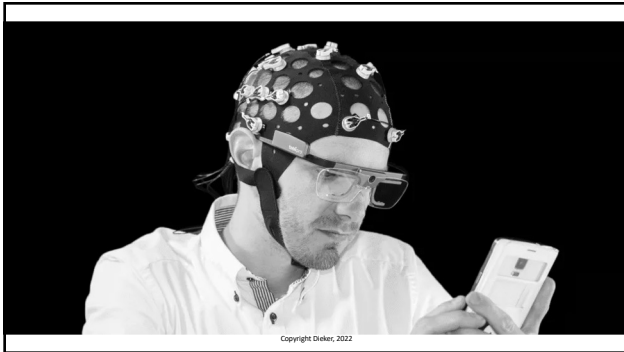
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Time to play with all of the Avatars

- Where would you like to start?
 - ZOOBEE
 - ELEMENTARY
 - SECONDARY
 - PARENT
 - MIDDLE SCHOL
- Wearing an Apple Watch- you could track your own biometrics

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