HEALTHCARE INNOVATION TECHNOLOGY LAB (HITLAB)

iFocus: AI-powered Eye Tracking Technology For ADHD

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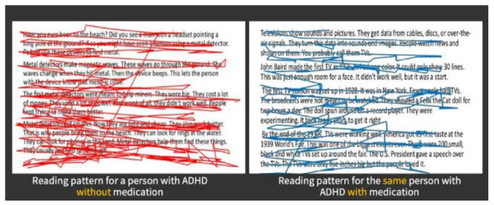
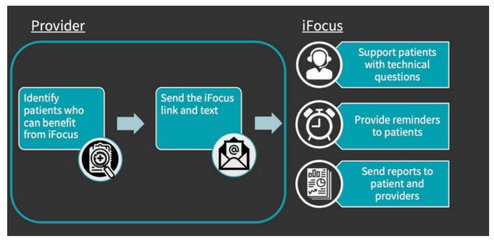
ABSTRACT

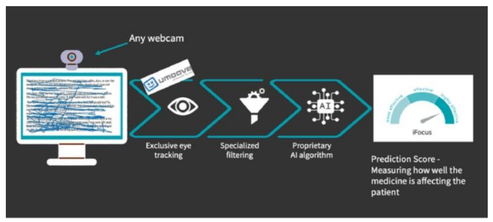
The healthcare system is designed around objective lab tests for physical health, but mental health lacks similar standardized tools. This absence of objective measures makes ADHD diagnosis and treatment highly subjective, relying on inconsistent self-reports and parental feedback. As a result, finding the right treatment is a lengthy, trial-and-error process with no clear, data-driven method for determining effectiveness.

ADHD management is further complicated by a shortage of specialists, forcing primary care physicians and pediatricians—who often lack the time and training for comprehensive evaluations—to oversee treatment. This leads to frustration for both clinicians and patients, as well as delays in optimizing care. Without reliable data to track progress, patients experience inconsistent treatment outcomes, while the inefficiencies strain an already overburdened mental health system, increasing costs and limiting access to quality care.

iFocus Health is a health tech company that provides an AI-powered, webcam-based platform designed to track patient progress in ADHD treatment. The technology uses eye-tracking during reading tasks to analyze changes in reading patterns, offering clinicians an objective measure of patient progress. By integrating real-time patient-reported input with eye-tracking data, iFocus generates quantifiable insights that support data-driven treatment decisions. This approach reduces reliance on subjective self-reports and helps clinicians adjust treatment more efficiently.







OBJECTIVES

- Evaluate the usability and functionality of the iFocus platform based on Jakob Nielsen's ten established heuristics.
- Identify usability issues, functionality challenges and potential roadblocks in user interactions with the platform.

STUDY METHODOLOGY

Heuristic Evaluation:

- HITLAB experts conducted a heuristic evaluation of the platform using Jakob Nielsen's usability principles, a widely recognized framework for assessing user interface design.
- The evaluation examined the typical user experience from the perspectives of two ADHD patient types:

32-year-old female who was diagnosed with ADHD 6 months ago and is about ab to begin medication.

Frustrations:
- Inconsistent treatment follow-ups.
- Difficulty accessing real-time insights, in a convenient setting without physically visiting a clinic or psycho-therapy center.

38-year-old male who has been long diagnosed with ADHD and has been on medications since long

Frustrations:
- Difficulty in tracking & managing medications, and treatment effects.
- Not knowing which medication is working or causing what side effects.
- Poor time management

- The evaluator analyzed the interface against Nielsen's heuristics on review of the design, layout, functionality, navigation, and content noting observed issues and their impact on usability and functionality.
- The evaluator noted the issues as observed and encountered, and their impact on usability and functionality of the platform.
- The recommendations made were categorized based on the impact value on the platform.

Expert Review Notes and Comments:

- The evaluator also assessed every single page that forms a part of a typical user experience.
- For every page (web page), the evaluator provided following
  - Positive features of the page including functionality, page design etc.
  - Error encountered or if something did not work as assumed/intended.
  - Recommendations to improve the page's visibility and functionality.

RESULTS

Strengths:

- The platform maintains a **consistent and well-organized structure** across all pages.
- It is **largely error-free**, ensuring a smooth user experience.
- A dedicated "Help" section is available, featuring:
  - A **searchable FAQ**
  - **Social media links** to the company's pages
  - **Contact details** for the developer
- The platform takes a **proactive approach** by offering:
  - A **comprehensive activity log** for each user
  - **Statistical insights** into user sessions and medication effectiveness
- These features empower users to:
  - Gain **private and independent insights** into what works for them
  - Make **data-informed decisions** about their treatment
- Users also have the option to **connect with a clinician** to review and discuss their results.

Heuristic Analysis Ratings:

- Platform scored very highly for heuristics like match between system and the real-world, consistency and standards, helping users recognize, diagnose and recover from errors, and help & documentation.
- Platform also performed well on heuristics like visibility of system status, user-control and freedom, error prevention, recognition rather than recall, aesthetic and minimalist design. Platform has scope for improvement in flexibility and efficiency of use.

Heuristics	Rating (out of 5)
Flexibility and Efficiency of Use	1 2 3
Visibility of System Status	1 2 3 4
User-control and Freedom	1 2 3 4
Error Prevention	1 2 3 4
Recognition rather than recall	1 2 3 4
Aesthetic and Minimalist Design	1 2 3 4
Match between System and Real-world	1 2 3 4 5
Consistency and Standards	1 2 3 4 5
Help Users Recognize, Diagnose and Recover From Errors	1 2 3 4 5
Help and Documentation	1 2 3 4 5

RECOMMENDATIONS

High-Impact Recommendations:

- **Redesign page layout and aesthetics** to improve user experience, including better placement of buttons and content to avoid stretched or cluttered appearance.
- **Include date and time stamps** for all user activities to support progress tracking and accurate record-keeping.
- **Add clearly marked exit routes** on each page to allow easy navigation back to main sections of the platform.
- **Enhance the user report section** by:
  - Including **interpretations and explanations** of iFocus results, self-reported scores, and medication data.
  - Presenting findings in a **clearer, more detailed format** for better understanding.

Low-to-Medium-Impact Recommendations:

- **Enable zoom in/out functionality** on all pages and ensure content remains properly formatted at different zoom levels.
- **Add search and filter features** for pages with lengthy data lists to improve accessibility and usability.
- **Create a dedicated section for medication adherence details** to help users better understand and manage their treatment routines.

CONCLUSIONS

- The **iFocus** platform offers an innovative, evidence-based solution for ADHD care, grounded in expert guidance and designed with user privacy and autonomy in mind.
- The heuristic evaluation conducted by HITLAB identified key areas for improvement that, once addressed, will significantly enhance the platform's usability and overall functionality.
- By incorporating HITLAB's recommendations—particularly in interface design, reporting clarity, and navigation—iFocus can further optimize its user experience, making it even more valuable to both patients and clinicians.
- **iFocus represents a promising advancement in digital ADHD management**, addressing the urgent need for objective, data-driven treatment monitoring. With its potential to personalize care and improve patient outcomes, usability remains a critical success factor.
- With these refinements, iFocus is well-positioned to deliver a more seamless, empowering, and effective ADHD care experience.

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