Moderated online vision tests

A quantitative and qualitative exploration of online vision tests from user experience field

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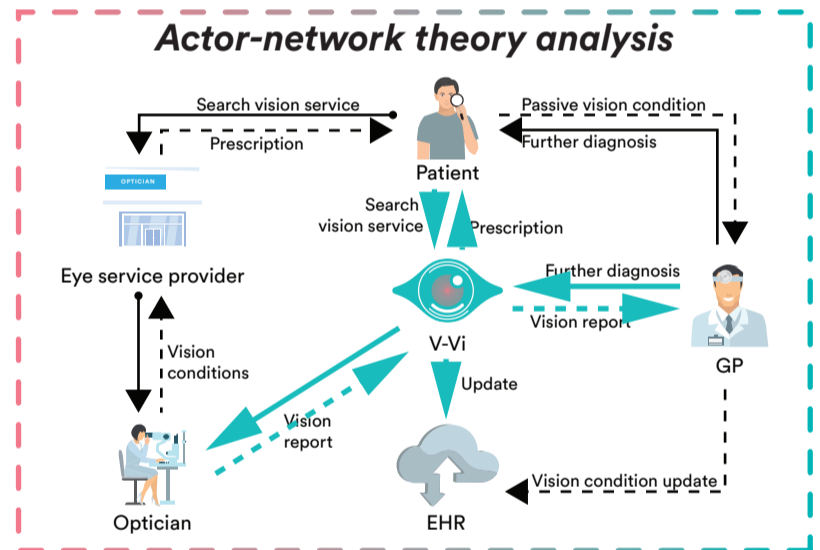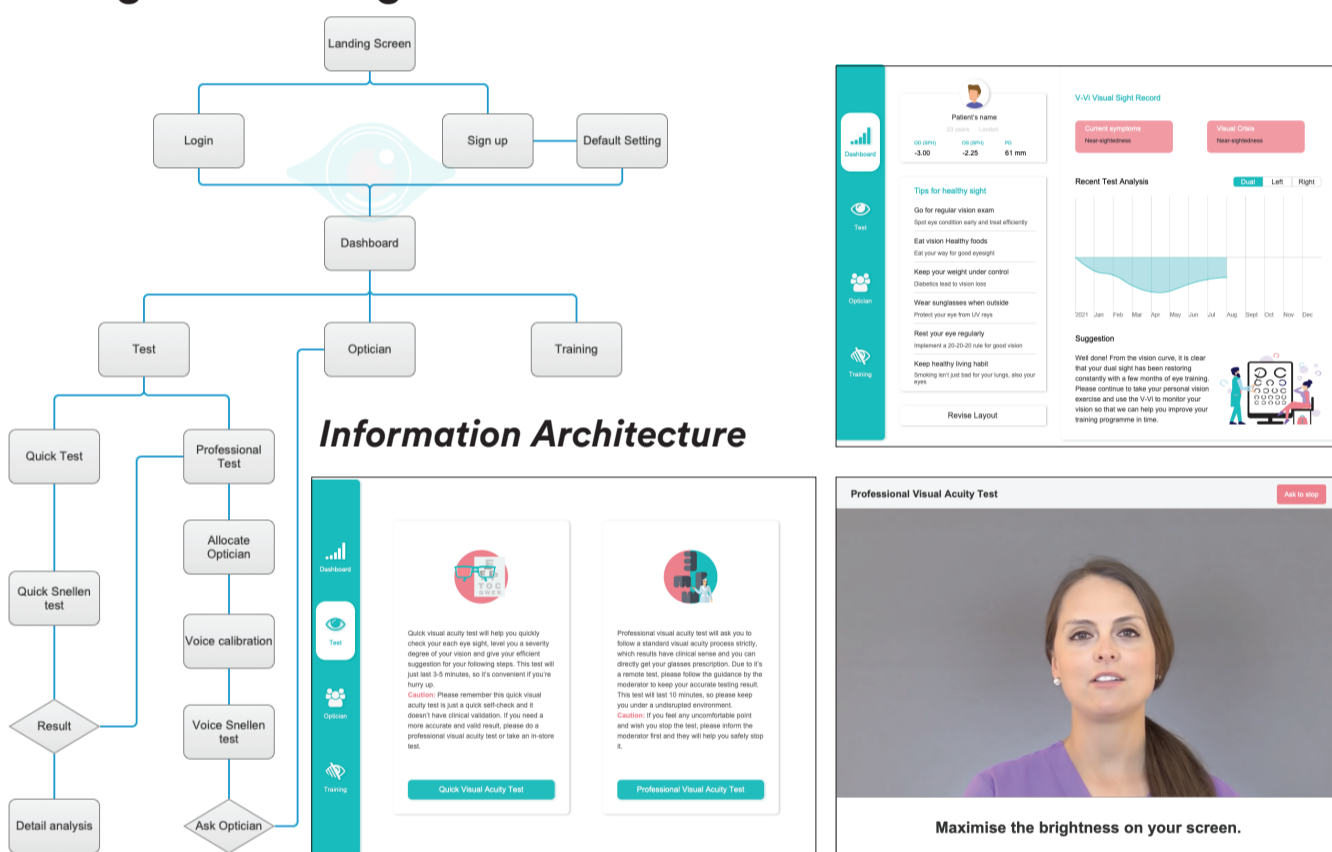
Abstract

Covid-19 increased the medical burden for vision health. Based on literature review, I found although there already are various online vision test tools, sledom of which is valid and could provide clinical results. This project is aim to analyse the validation difficulty reason from user experience persepective and outline potential solution. Firstly, I delivieried survey to research about the expereince of in-store vision test and find communicating with optician could increase the credibility of testing results for patients . Then, the interview results also verified this conclusion and give a insight about moderated online vision test. From the usability test, particiapte could correctly follow the testing guidance on V-Vi, but there still need more validation and revise for accurate testing results.

Introduction & Background

With Covid-19 spreads worldwide, people's daily eye condition has gradually become worse. At the moment, eye service sources had to reduced in order to protect the safety of patient and optician. Additionally, WHO predicted visual impairment burden would increase with the growth of world population. Under this context, there are more and more researchers addicted into online vision tests and developed numerous test tools. However, although in the technology degree, it would be valid for online testing, most all of the tools lack of validation and can't provide clinical prescription. According to their achievement, this project analyse the reason why it's difficult to provide clinical results and provide a potential prototype for online vision tests.

Diagram / Design

Information Architecture

Scan QR Code for survey

Scan QR Code for survey report

Scan QR Code for V-Vi Prototype

Actor-network theory analysis

Research methodology

Survey

This surveys to investigate the user experience of in-store eye examination and collect the people's opinions about online vision test among different age groups.

Interview

The purpose of interview is to research about the opinion of online visual acuity test and the stimulus of having vision tests.

Usability test

Two devised tasks under different context: 1)quick test for routine vision update; 2)Professional test for clinical prescription.

Research results

Survey

From the respondes (N: 103), I found 1)there are people haven't had vision tests; 2)Optician explanation and communicate is important; 3)People concerns about the accuracy and damage of online tests.

Interview

1) The stimulus of tests are mainly for the vision change;
2) Patient need understandable test procedure and test result;
3) Time-saving and money saving;
4) Optician could be a important media in testing process.

Conclusion & Further work

Conclusion

1) Optician as a media role during the vision tests, could add the credibility of results for patients.;
2) Moderated tests could be a better solution for online vision tests, but still need more validation;
3) Online visioj tests could reduce the medical burden in HIC and LMIC.

Further work

1) Screen reflection influence;
2) Screen tilt inluence;
3) More professional prototype for V-Vi validation;
4) Mapping rule for testing distance, screen resolution and testing chart size.