Individual Colour Perception

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Aims and Objectives

Have you ever found yourself debating with another person whether a specific colour is yellow or orange, red or orange, green or blue, or similar? This tends to be a common dispute, but why? As most of us know from school, colours are the visual perception of the electromagnetic spectrum, humans see colours in the specific range of visible spectrum targeting from about 380 nanometres to 750 nanometres. Another thing we know, is that our eyes help us see light thanks to the cones and rods receptors, but the interpretation of colour happens in our brains, hence the different options people have about what it seems to be the same colour.

What this project aims is attempting to visualise and measure the difference between peoples' opinion about colour and look for some patterns or rules that can be established.

Ongoing Development

The project has moved from the pen and paper ideation sketching phase to real life variation. Although we are already at this step, it should be noted that going back is acceptable, for the sake of improving the model and alternating the versions until we find the best one. It is important to keep track of every possible metric there is, in order to ensure the most accurate results. For example, distances are measured, tool types used are noted.

The first User Testing has already been done. Results are valuable, however the system of recording the data would need to be worked on and this is where the Design Thinking method comes in use.

Methods

For this project, User Experience Design Thinking methods were used. Although this strategy is targeted towards improving products, in our case it provides structure and clear approach towards the task. Thanks to the process being non-linear, but cyclical we can continue on improving the experiment based on feedback. Furthermore, UX helps us turn peoples' opinions and experiences into quantitative data, which can be then handled in a measurable way, this way we can ensure useful data, which would help us define meaningful results.
The approach of the project is rather analogue, the experiment is using physical tools, which provides us with the raw experience colours and better level of control, as going digital may not allow us of having constant results, considering that displays differ from one another. But what is the actual experiment?

We have a source of light, which goes trough a collimator lens, used to make light travel in parallel in order to replicate a concentrated ray of light entering the prism. Then we have a display on which we have a rainbow projected through the prism and the participants can mark their perception of colour (for example: what is the idea of the colour yellow that they can see) on a piece of tracing paper. This type of paper allow us to stack multiple results and directly compare them. For a visualisation look at *Figure 1* below.

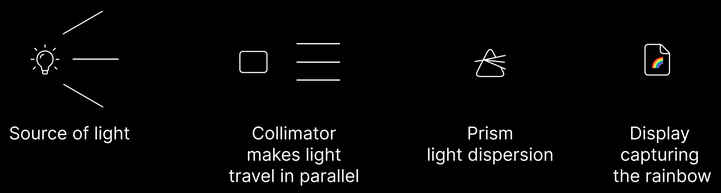

Figure 1

Predicted Outcomes

Of course in this project we are working with opinions, this is why expected results are diverge. The first testing already proves that. What we are looking for is interesting findings when analysing the data and during the User Testing.
Figure 2 provides us we data from the first test, where we can see a user marking the ranges of the spectrum and specifically blue, green, yellow and orange colours.

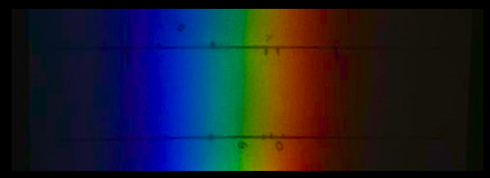

Figure 2

Future Work

My aim is to convert this project to a simple to follow and accessible template, as I believe it could bring a good starting point for people interested in colour perception. Whether this is young students in school, who can visualise how differently individuals see colours, or people interested in taking up this model and developing it even further.

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