Should All Teens Switch to Black and White Screens?
A Statistical Analysis of the Contribution of Colour to Phone Addiction.

Introduction

We decided to do our investigation on phone addiction in today's youth, as every day we see the constant use of mobile phones by young people.
Apps, such as Snapchat, Instagram, Facebook and YouTube, are designed using bright tiles and colours - stimulants, designed to addict the user.

Aims & Hypothesis

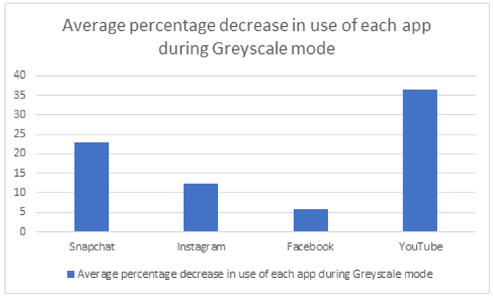
Our project is focused on the use of colour in app design, as from our research we discovered over 2 thirds of our reactions are based on colour (Jill Morton, Color Matters) The aim of our investigation was to find out the correlation between its usage and social media addiction.

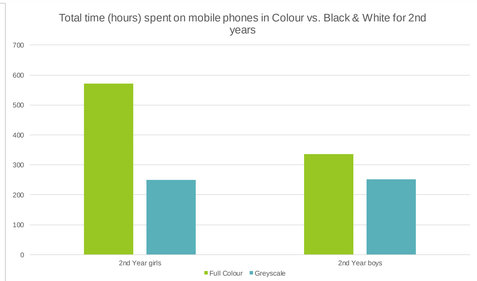
We hypothesised that social media usage would greatly decrease in the 5 days that the experiments' participants phone was in Greyscale mode.

Method

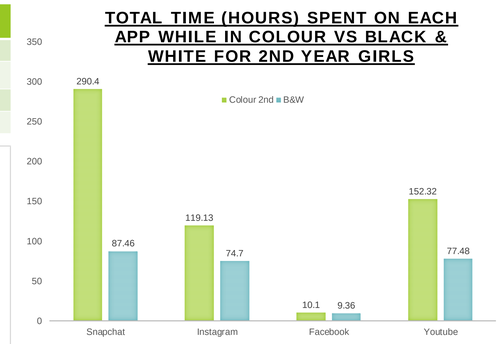
- For our investigation we took a sample from 1st to Transition Year of both boys and girls
- In preparation for our first day of our experiment, we made surveys including questions on sleeping patterns, mood and liability to pick phones, as well as creating our tables that we would use to collect data.
- For the first part of our experiment, the participants signed an agreement, to say we had no liability for any damage that may happen to their phones over the course of the experiment. We recorded their usage of Snapchat, Instagram, Facebook and YouTube for the past 5 days (fig.1) and we then changed their phones to greyscale. (fig 2)
- After the participants had their phones on greyscale for 5 days, we recorded their usage and they completed our surveys. (Fig 3)
- We then repeated the first and second stages of our experiment on our male candidates. (Fig 4)

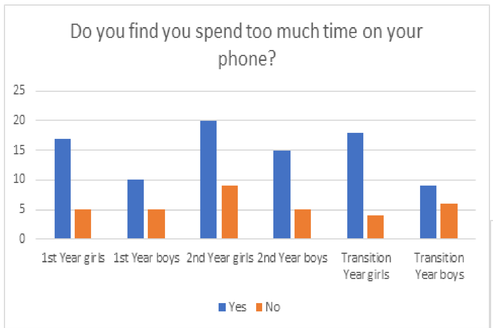
Results

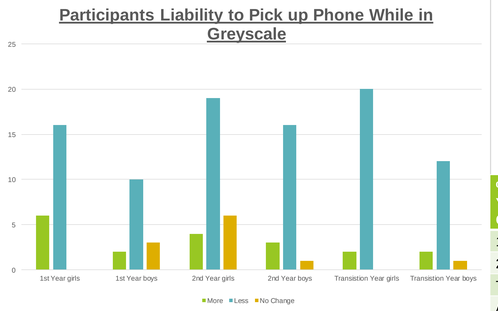


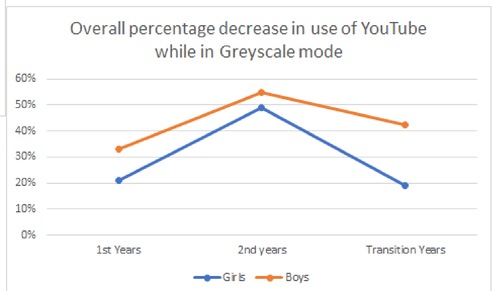


Average percentage decrease in use of each app during Greyscale mode	
YouTube	36.51%
Snapchat	22.98%
Instagram	12.36%
Facebook	5.86%









% Decrease in Use of YouTube while in Greyscale	Boys	Girls
1st Years	21%	33%
2nd Years	49%	55%
Transition Years	19%	42%
Average % Decrease	36.51%	

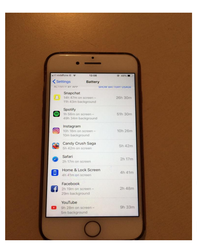


Fig 1

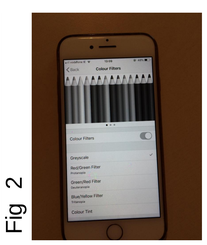


Fig 2

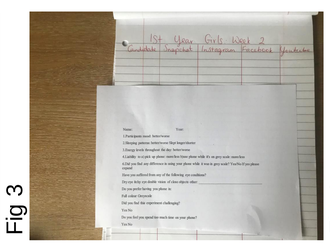


Fig 3

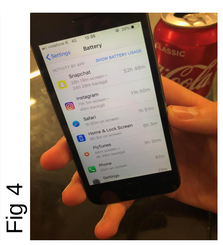


Fig 4

Conclusion

From our investigation we have concluded that colour impacts device and social media usage. When mobile phones were in Greyscale mode, time spent on the social media apps Snapchat, Instagram, Facebook and YouTube decreased by an average of 19.43%. YouTube was the most impacted by the loss of colour, with a decrease of 36.51%, followed by Snapchat at 22.98%
From our survey, 72% of participants reported that they feel they spend too much time on their phone, while 78% reported finding having no colour on their phones challenging. During our experiment when participants spent less time on their phones, 74% reported better sleep and 52% having a better mood.

Greyscale mode

Greyscale mode is a colour filter which impacts the display on an iPhone screen. While in Greyscale mode, an iPhone screen will only display in a range of shades from black to white.

Everyday Implications

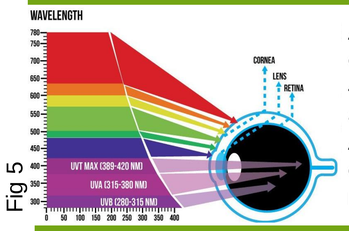


Fig 5

Artificial blue light exists between 415 nm to 455 nm, and can cause AMD and impact our circadian rhythm. (Fig 5)

Everyday Implications

Our use of social media is greatly influencing the way our society works.
In 2012, 49% of teenagers reported talking in person as their favourite method of communication, by 2018 this figure had dropped to 32%.
In a 2016 study, 50% of teens reported that they feel addicted to their mobile phones, however 78% of all teen users feel the need to check them every hour.
Although our use of mobile phones is so high, we are aware to some extent of their effects. In 2018, despite 70% of teens using social media everyday, 72% reported that they believe tech companies manipulate users to spend more time on their devices.