

# The Differences of Reading Pattern

## by the Media Types

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### Abstract

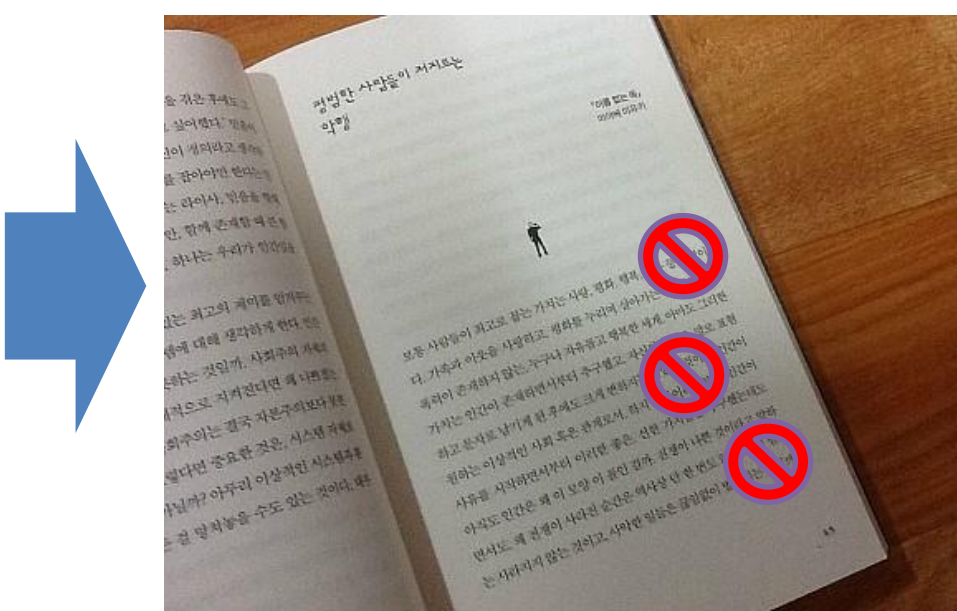
The habitual occurrence of skipping while reading in digital media (such as the ‘F-shape’ pattern) is expected to have adverse effects on reading in general, and overall reading ability and performance. Thus, our study tried to identify the differences in reading patterns between paper and screen and to find whether subjective impressions matter when reading on such mediums. There are two hypothesizes. Hypothesis 1: There will be less cognitive efforts in digital media reading than in paper reading. Hypothesis 2: The level of perceived reading comprehension will be higher when reading on screen than on paper.

### Motivation

High school student:  
reading task

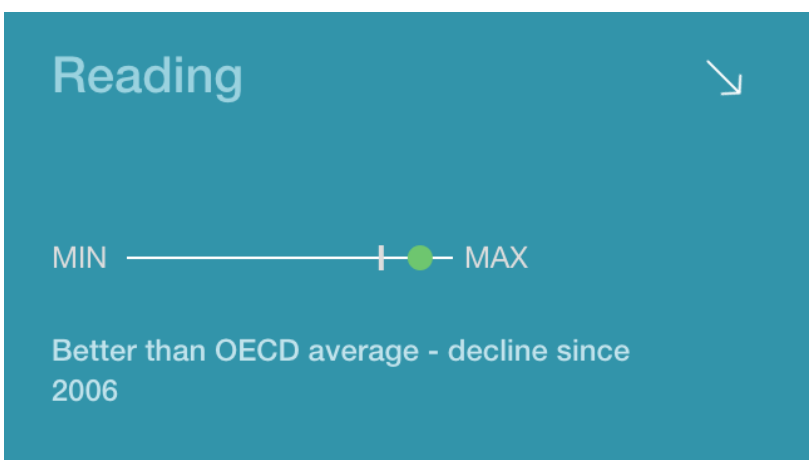


Reading errors  
occur only at the  
edge of the text



### Purpose

*Declining Reading Ability*  
Better than OECD average,  
but decline since 2006



OECD PISA Report, 2016.

*Prevalence of Digital Media?*  
It can be one of the possible  
reasons.



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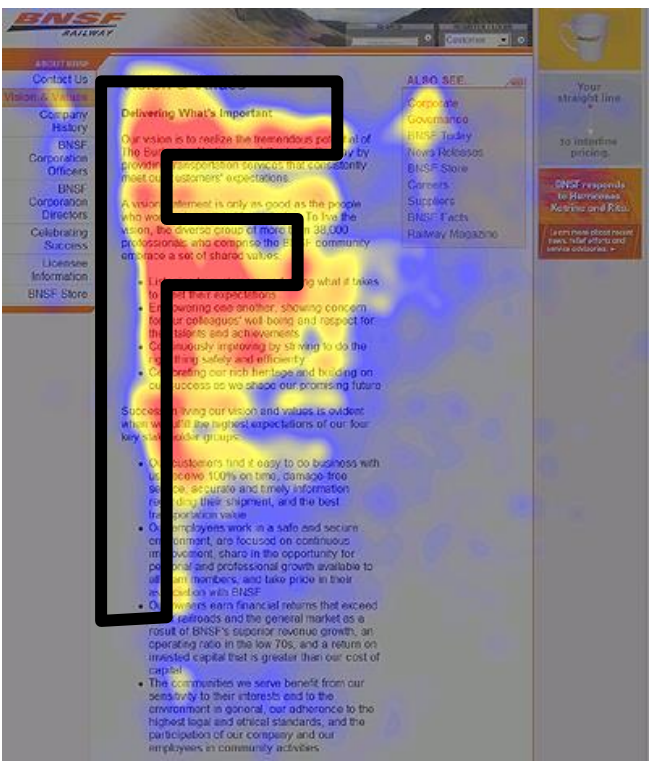
### Introduction

Background: “F-Shape” Reading Pattern

DANS, KON OCH JAGPROJEKT

På jakt efter ungdomars kroppsspråk och den ”synkretiska dansen”, en sammansättning av olika kulturells dans, har jag i mitt fallarbete under hösten rört mig på olika arenor inom skolans värld. Nordiska, afrikanska, syd- och östeuropeiska ungdomar gör sina röster höra genom sång, musik, skrik, skrat och gestaltar känslor och uttryck med hjälp av kroppsspråk och dans.

Den individuella estetiken framträder i kläder, frisyrier och symboliska tecken som förstärker ungdomarnas ”jagprojekt” där också den egna stilen i kroppspråkerna spelar en betydande roll i identitetsprovningen. Upphållsrummet fungerar som offentlig arena där ungdomarna spelar upp sina performancekännande kroppsspråk.



### Methodology

#### # Research Question

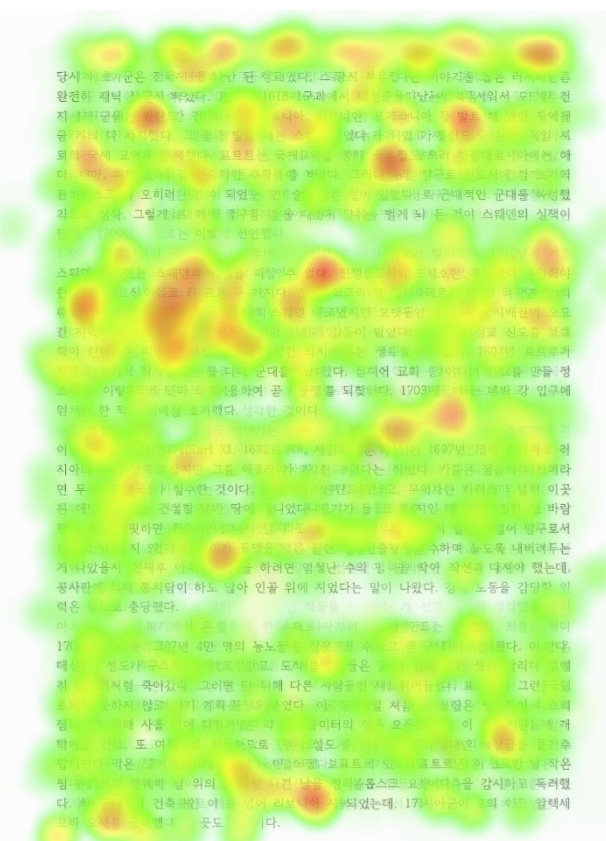
-Is there any differences of **cognitive efforts** and **self-perception** between paper and digital media?

- The habitual occurrence of skipping while in digital media(such as the ‘F-shape’ pattern) is expected to have adverse effects on reading in general and overall reading avility and performance
- Our study tried to identify the differences in reading patterns between paper and screen and to find whether subjective impressions matter when reading on such mediums.

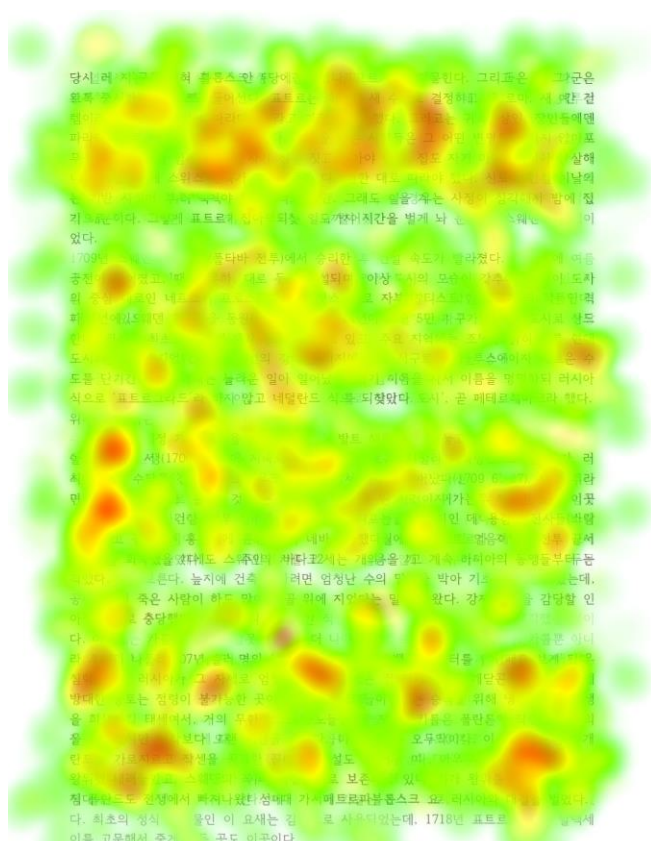
# Hypothesis 1 : There will be less cognitive efforts in digital media reading than in paper reading.

# Hypothesis 2: The level of perceived reading comprehension will be higher when reading on screen than on paper.

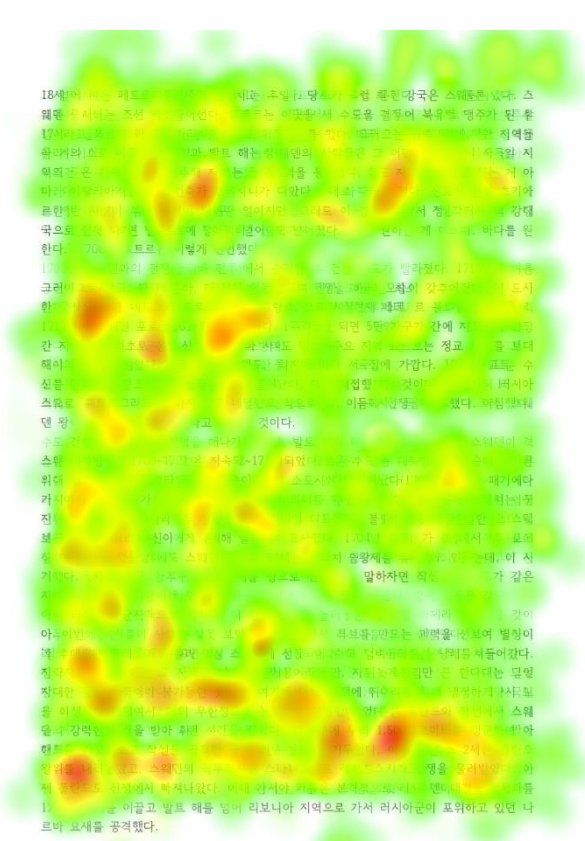
### Research & Discussion



Computer



Paper



Tablet

#### # H1: **Verified**

Heatmap and perceived difficulties showed significant results. Same trend (Paper > Tablet > Screen) with expectation and prior research results.

In digital media, the distraction of the gaze seems to exist to some extent considering heatmap data.

If we compare the actual reading measurements and eye tracking results in future experiments, this trend is expected to be reproduced more clearly.

#### # H2: **Rejected**

The same trends as expected in the hypotheses were found(Tablet > Screen > Paper), but not statistically significant. This may be the result of fewer specimens, and it may be necessary to recruit more subjects in the future and re-examine them.

### Conclusion

- Role of Media Familiarity in Subjective Impression
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### References

- J. Nielsen, “F-shaped pattern for reading web content”, Nielsen Norman Group, 2006.
- Ralf Biediert et al. “Reading and estimating gaze for smart phones”
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