

Toward Interactive Reading: Co-designing With Adolescents to Explore Design Opportunities for Overcoming Reading Challenges

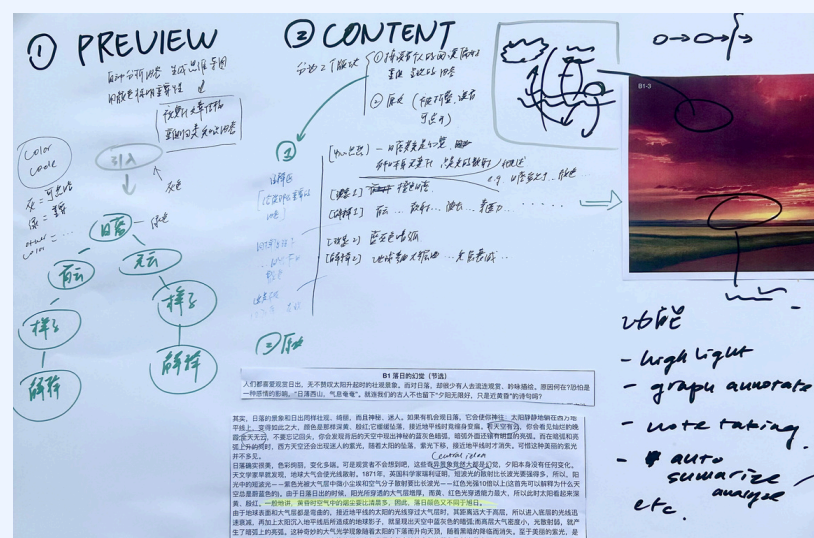
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INTRODUCTION

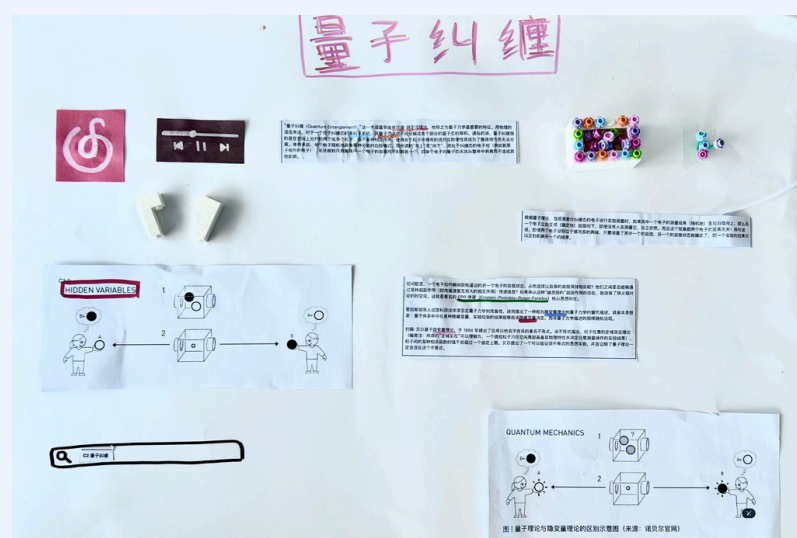
Reading is an essential skill throughout life, from childhood to adulthood. Adolescence, in particular, is a critical stage where individuals transition from learning to read to reading to learn. However, many adolescents find reading challenging due to limited vocabularies and self-regulation, etc.

We gathered **10 adolescents** aged from 14 to 17 who find reading challenging (seven of them exhibiting ADHD tendencies) in a series of **co-design workshops**, where participants were empowered to envision how technologies could help them overcome reading challenges and find joy in reading.

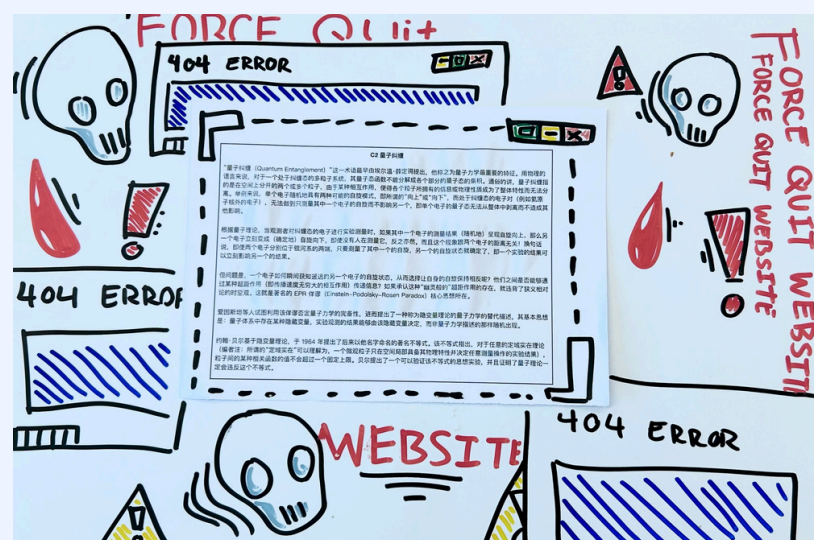
SAMPLE DESIGNS



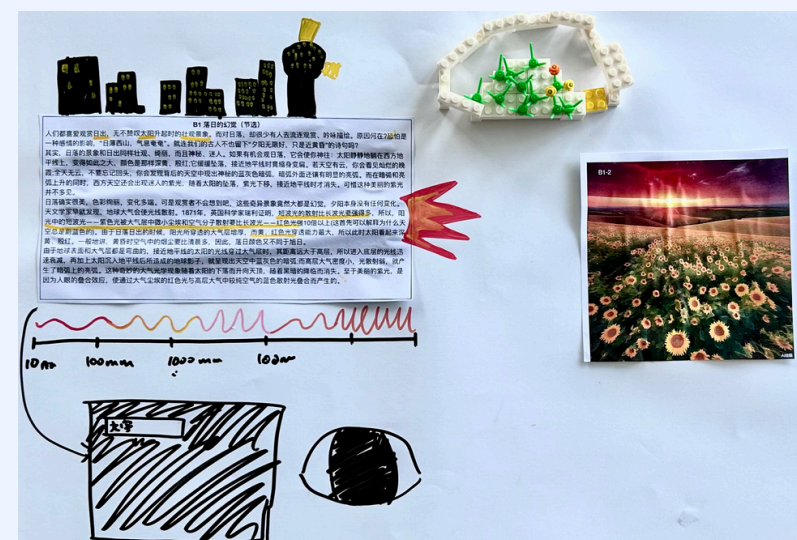
Content preview based on the reader's prior knowledge and reading habits. (P1)



Background music blocking external noise to stay focused. (P7)



A background simulating internet virus with intense colors to keep urgency. (P4)



An "attention flow" panel highlighting the reader's current focused text powered by an eye-tracking system. (P6)

FINDINGS

SUSTAIN MOTIVATION TO READ



Structured text preview: Reorganizes the article with sectional summaries to reduce readers' initial stress and lower comprehension barriers.



Positive visual elements: Uses icons and shapes with positive sentiment to keep readers motivated.

MAKE READING INTERESTING AND ENGAGING



Sensory stimuli: Uses vibrant color, and non-visual stimuli such as tactile, olfactory, sound, and even immersive interactions to keep readers engaged.



Post-reading reflection: Integrate Q&A to transform from passive reading to active understanding.

IMPROVE READING EFFICIENCY



Adaptive progress monitor: Keep track of and highlight readers' focused area. e.g., with eye-tracking technology "I just want it to flow" (P6)



High-intensity visuals: Create a sense of urgency that "pressures" readers to finish reading

LACK OF READING MOTIVATION

COMPREHENDING COMPLEX TEXT

EXTERNAL DISTRACTION

CO-DESIGN PROCEDURE

Warm-up

Familiarizing with reading materials

Co-design

- Read sample and reflect on reading experience
- Illustrate design ideas with the materials provided

Demonstration and discussion



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