InkTrap

How generative AI can improve reading comprehension and accessability

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What is InkTrap?

InkTrap is a reading accessibility website that uses generative AI to create images and text for students who have trouble comprehending text and focusing for long periods of time. By using generative AI sites such as Microsoft Copilot and OpenArt, InkTrap creates images relevant to whatever you're reading using its AI scanability skills. Users can choose what style they want their images to be in and how often they are created so that each book has specific images that align with its themes, tone, and writing style.

Because InkTrap was created for accessibility purposes, users of the site can select fonts and color systems specifically curated to increase legibility, focus, and comprehension that are best for their needs. If a user struggles with ADHD or Dyslexia, they can view a key that provides them with information about what font and color combination is best for their conditions. The settings of a user automatically save after selection, granting users the ability to switch between their settings and their selected book to fine tune their specific needs. While reading a book, the user can select to turn on and off their accessibility settings for ease of use.

Want to dive deeper?

PROCESS DOCUMENT

Check out how InkTrap was designed and realized.

FIGMA PROTOTYPE

Check out InkTrap's Prototype and see how it works first hand.

Disclaimer: InkTrap was created for desktop use. Prototype may be finicky on mobile.

Why it Works

Unlike other websites, InkTrap's unique image creation allows for students to improve attention and comprehension while reading through redundancy. We can view this through Allan Paivo's picture superiority effect, that refers to the fact that people tend to remember images better than words. Pavio believed that visuals are stored in the brain in two ways: as an image, and the word or phrase that describes it. This makes the reading process easier and more memorable for those who struggle with reading comprehension.

We have seen this theory work over and over again. When learning to read, children always start with picture books. Why? Because images help with word association and memory. So if it works for toddlers, why can't it work for students too?

Target Audience

PRIMARY

Students with

- ADHD
- Aphantasia
- Dyslexia
- Learning Handicaps

SECONDARY

- Students at UGA
- Low Income Families

AI Programs Used

TEXT CONTENT

- ChatGPT

VISUAL DESCRIPTIONS

- ChatGPT

IMAGES

- Adobe Firefly
- Copilot
- OpenArt

How it Works

IMAGE CREATION

InkTrap's AI will scan the excerpts before and after the image to create a prompt and image that is relevant to what is occuring in the book and in the style selected.

CHATGPT'S PROMPT

Certainly! Here's a detailed text prompt for an AI model to generate the scene:

"1950s Broadway movie theater at night, its marquee lit up with a classic film title in bold, retro font. A long line of people stretches down the sidewalk, eager to enter. The men wear vintage suits with fedoras, and the women are dressed in elegant mid-century coats, dresses, gloves, and hats. Old-fashioned cars are parked along the curb, adding to the nostalgic feel of the scene. The neon signs of nearby shops and streetlights cast a warm glow on the pavement, creating a lively atmosphere that captures the excitement of a classic night out at the movies in 1950s New York."

OPENART'S RESPONSE

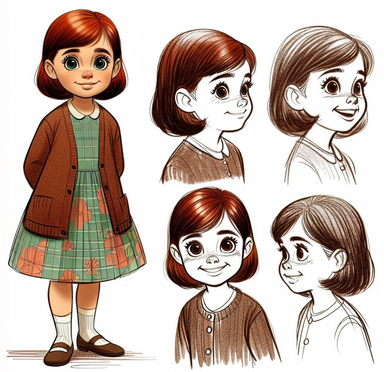


CHARACTER PROFILES

InkTrap's AI will create a descriptive overview of a character in the user's book. InkTrap's AI will then use that description to generate an image or "sketch" of the character.

To complete the profile, the AI will create a character summary accompanied with tailored personality traits. When reading, these summaries will shift to reflect what the character is reading in the chapter.

COPILOT'S SKETCH



CHATGPT'S DESCRIPTION

Phoebe Caulfield

Phoebe is Holden's intelligent and affectionate younger sister, whom he deeply loves and admires. She is one of the few people Holden feels truly understands him, and her innocence and honesty make her a beacon of hope in his life. Her wit and perceptiveness often surprise Holden, as she is mature beyond her years while still embodying the childlike purity he cherishes. Phoebe represents a world Holden wants to preserve, making her a critical emotional anchor for him throughout the story.

CHATGPT'S TRAITS

Phoebe Caulfield

1. Intelligent
2. Perceptive
3. Innocent
4. Playful
5. Honest
6. Supportive