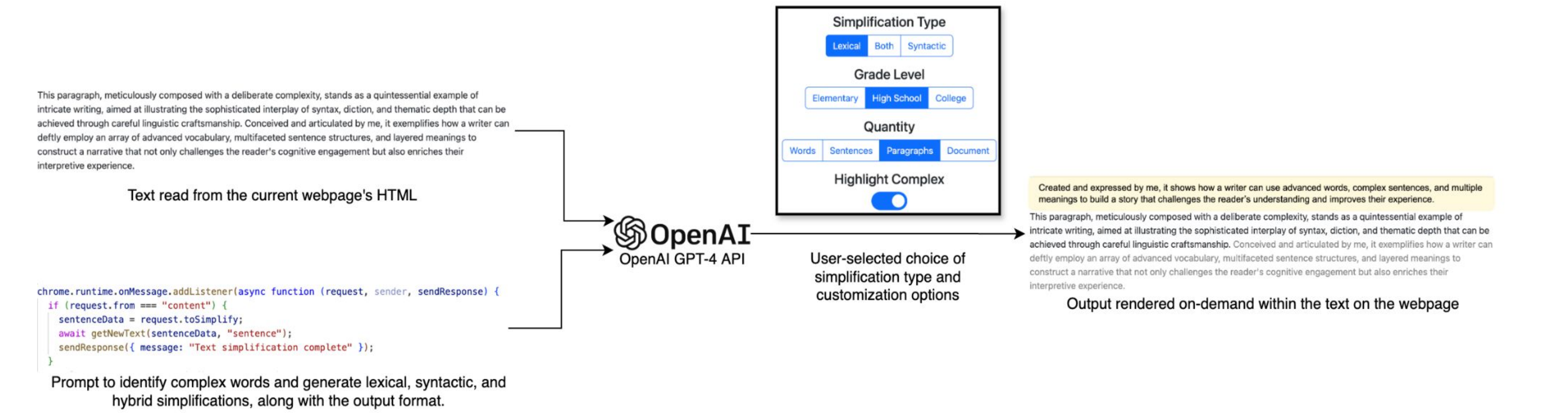


Contribution

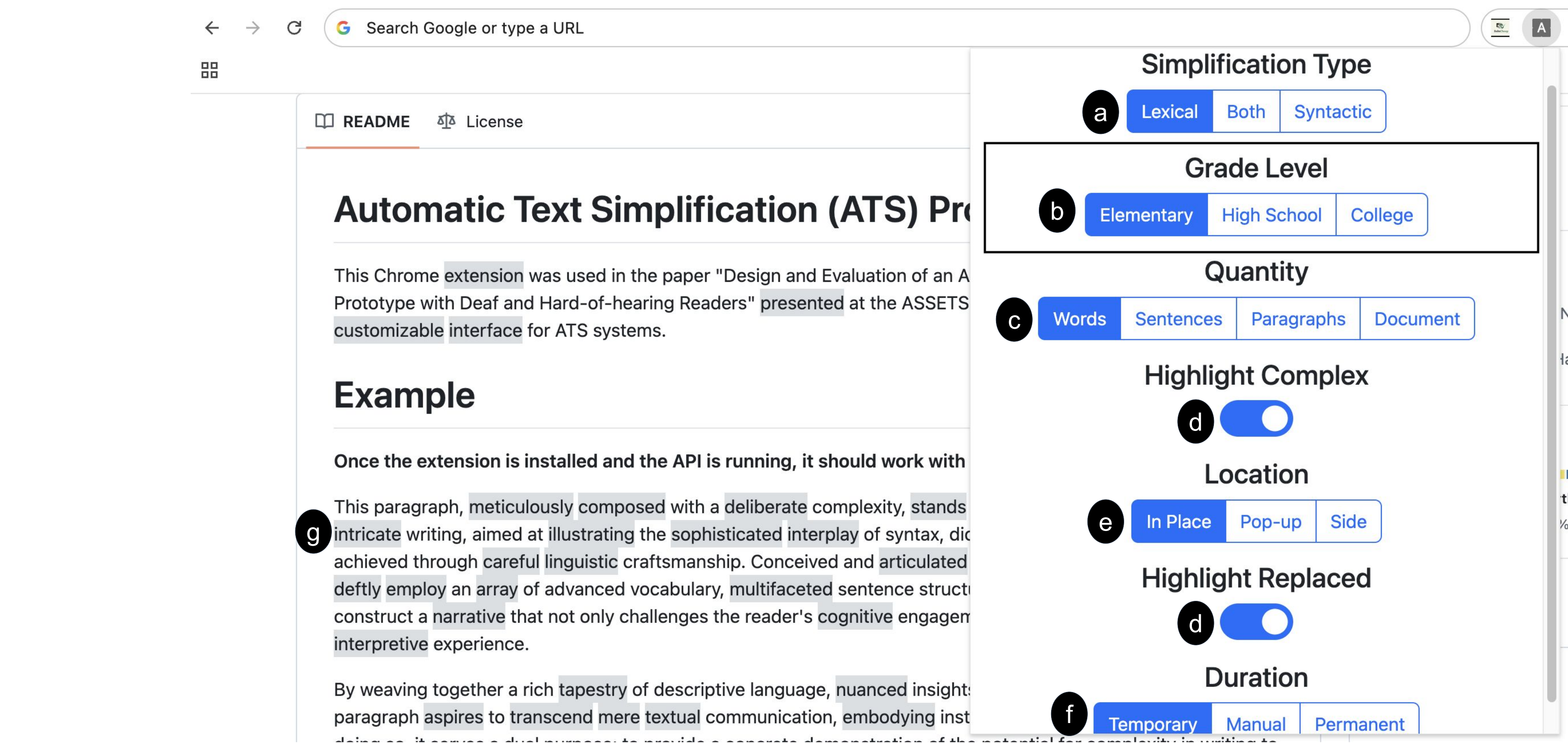
We developed an in-situ text simplification tool to enhance reading comprehension for d/Deaf and hard-of-hearing users. Through a web extension, users can choose the type and degree of simplification and customize the appearance of the output.

System Design



System schematic showing webpage text and user customization inputs processed by GPT-4 and rendered as needed.

Design and Funcationality of Web Extension



Components of the real-time text simplification system: (a) GPT-4 used for generating text simplifications (*lexical, syntactic, or hybrid*) simplifications, (b) option to choose grade level (*elementary, high school, college*), (c) scope control (*words, sentences, paragraphs, full document*), (d) highlighting colors showing complex (gray) and simplified (yellow) text, (e) placement options (*in-place, pop-up, side view*), (f) duration control (*temporary, manual, permanent display*), and (g) presentation of simplified output.

Future Directions

- For DHH readers, how does text-based simplification compare to sign-based video in improving comprehension?
- How can the system be adapted to support other user groups, e.g., people with dyslexia, or those with aphasia or autism?
- Does in-situ text simplification improve the reading experience more than chatbot-based assistance (e.g., ChatGPT or Gemini)?
- What additional customization controls (e.g., concise vs. expanded text) should the system offer, and how can it adapt to user preferences over time?

Live Demo (Try It Yourself!)

- Scan QR to watch demo video of the tool by scanning the QR Code above.
 - Link: <https://youtu.be/nEPk5Xcb7g0>
- Use the GitHub link to access the open-source code.
 - Link: <https://github.com/TITHI-KHAN/ATS-GPT>



Demo VIDEO



GitHub Link

AI-Powered Automatic Text Simplification for Accessible Reading Support

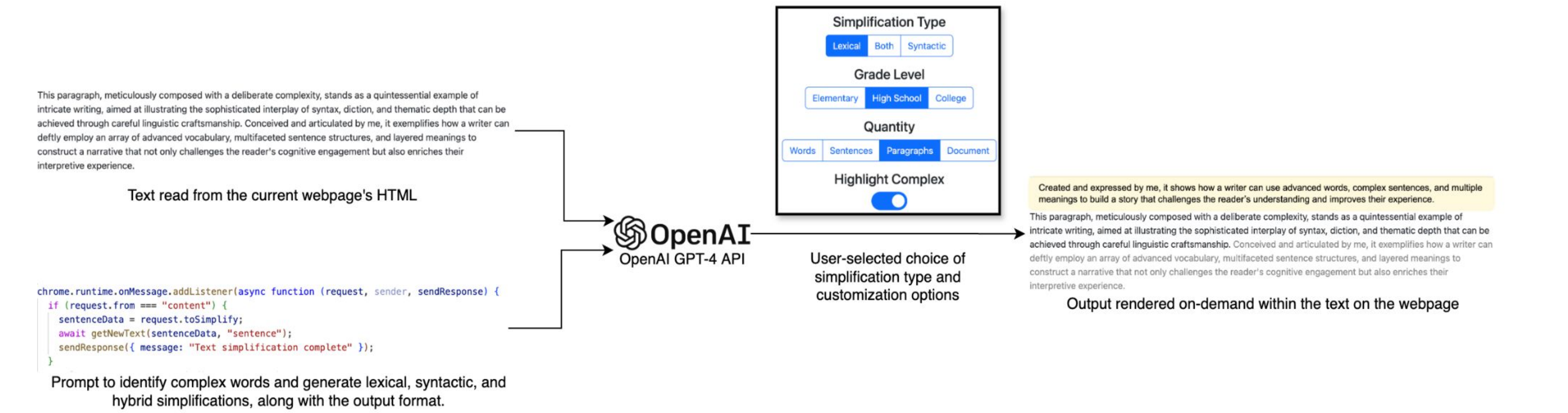
Nazmun Nahar Khanom (nkhanom@tulane.edu), Aaron Gershkovich, Oliver Alonzo, Saad Hassan



Contribution

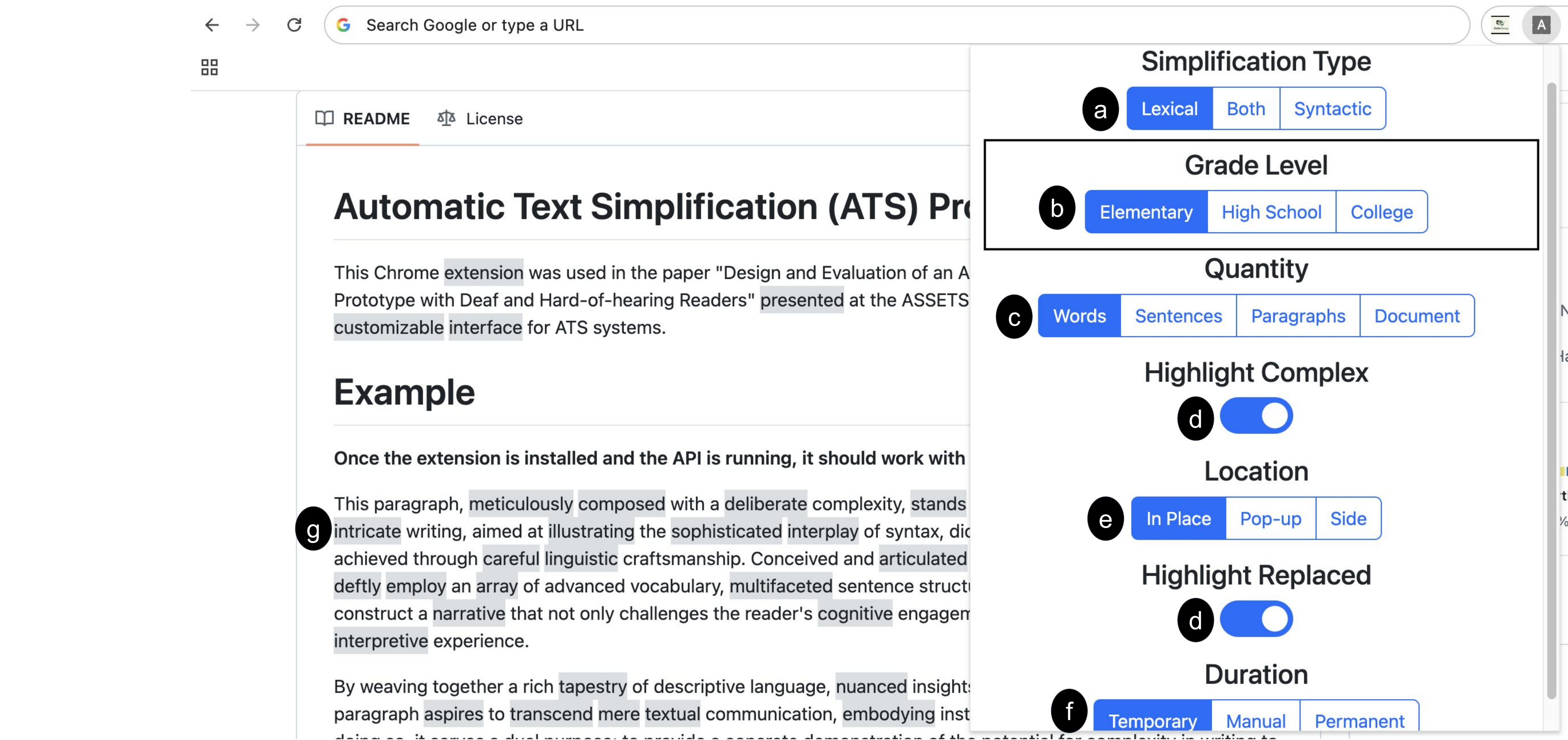
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