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Cathoven: Enhancing Language Acquisition through Tailored Input and Targeted Output Feedback

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Abstract

Language acquisition occurs when learners are exposed to comprehensible input slightly beyond their current level and are guided to notice and modify the errors in their output. However, mismatched input and inadequate feedback on output can hinder effective learning. Cathoven, an artificial intelligence assistant for language teachers, addresses these challenges by analyzing text difficulty, adapting materials, generating supplementary content and providing targeted feedback on students' output. This tech review aims to present a comprehensive exploration of Cathoven's applications in English teaching and learning, highlighting both its advantages and limitations as a versatile tool.

Keywords

Cathoven, comprehensible input, high-quality output, targeted feedback, text adaption

Introduction

Language acquisition is most effective when learners are exposed to input slightly beyond their current proficiency level (Krashen, 1981) and are pushed to produce high-quality output (Swain, 2005). However, mismatched input, either overly simplistic or complex, and poorly targeted feedback can impede language learning (Donesch-Jezo, 2011; Nation and Macalister, 2020). Cathoven, an artificial intelligence (AI)-driven platform, aims to address these issues by analyzing text difficulty, adapting given texts and even

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customizing materials for tailored input, as well as providing targeted feedback on students' output.

Overview

Cathoven is an AI assistant for language teachers, offering various functions such as the text analyzer, level adaptor, reading generator and writing reviser (https://nexthub.cathoven.com) (see Figure 1). With an intuitive interface, it allows users to assess and adapt text difficulty to the targeted level and generate supplementary materials tailored to specific teaching needs. These features are accessible to both free and paid users,

Figure 1. Various Functions of Cathoven.

with access to certain functions requiring a varying number of Catnips. Paid users receive a larger monthly Catnip allowance and higher word limits for all functions.

Providing Tailored Materials as Comprehensible Input

Adapting texts to varying proficiency levels remains challenging for many teachers due to limited support, with a common need for annotations of linguistic features and indicators of target proficiency ranges (Jin and Lu, 2018). Cathoven addresses this by analyzing text difficulty and presenting detailed results, such as color-coded words and sentences based on difficulty levels, the overall text level and a breakdown of its components (see Figure 2). During lesson preparation, teachers can use Cathoven to assess the difficulty of authentic materials, identify challenging words, and modify them to match students' proficiency levels. For example, the word 'imperil' (C2 level, Common European Framework of Reference for Languages (CEFR)) may be too advanced for students and can be substituted with simpler words like 'harm' or 'damage' (B2 level, CEFR). However, as Cathoven does not recommend specific word choices, manual adjustments by teachers are still necessary.

Simplified texts often enhance comprehension more than authentic ones (Crossley et al., 2014). Cathoven can automatically adjust text difficulty to match the target level, as shown in Figure 3, which illustrates how the tool modifies the text for easier comprehension. This is especially useful in mixed-level classes, where teachers can group students by proficiency and use Cathoven to tailor materials for each group while covering the same topic. As students progress, graded reading within the same topic can be introduced.

Input should extend beyond textbooks, as diverse sources enhance language learning (Ying, 2019). Cathoven enables teachers to customize materials based on criteria like difficulty level, topic, keywords, key phrases and grammatical structures (see Figure 4). In morning reading sessions, teachers can supplement textbooks with Cathoven-generated materials, which can be displayed via PowerPoint or printed for students to read aloud.

Figure 2. Results of the Analyzed Text.

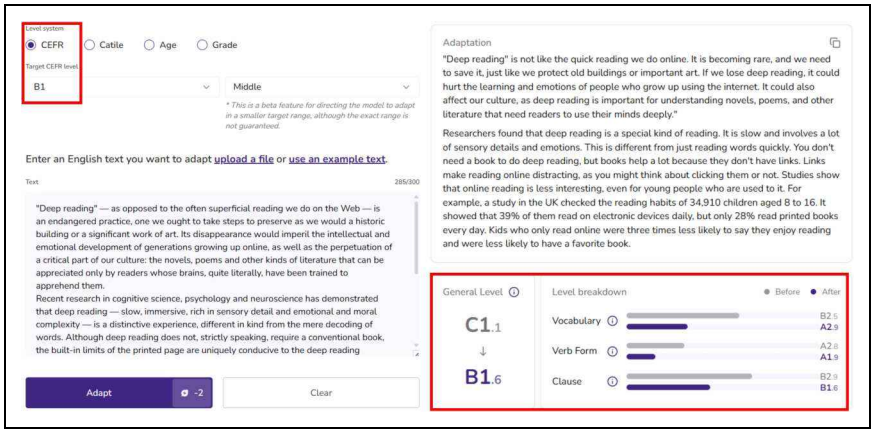

Figure 3. The Adapted Results of the Given Text.

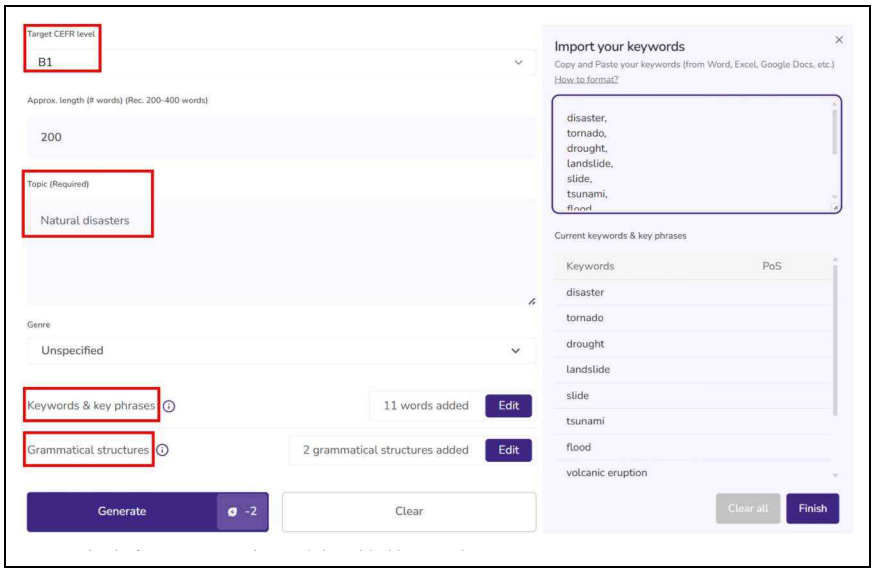

Figure 4. Criteria for Text Generation and the Added Keywords.

This is also useful in grammar lessons, as Cathoven allows teachers to target specific grammatical structures (see Figure 5) for focused instruction. However, since Cathoven-generated texts are sometimes overly mechanical, it 's essential to ensure students practice these structures in dynamic, communicative contexts.

Generating Targeted Feedback for High-Quality Output

Linguistic accuracy and complexity are strongly linked to learners' second-language (L2) output (Barkaoui, 2024). Noticing discrepancies between actual and target output is

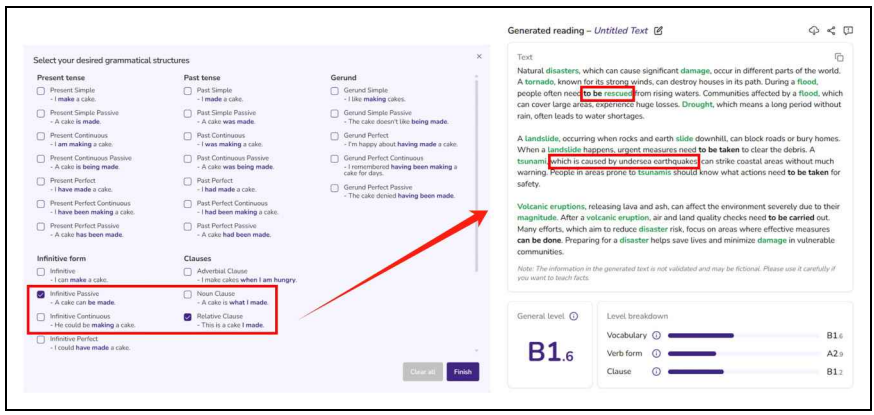

Figure 5. Options of Grammatical Structures and the Generated Text.

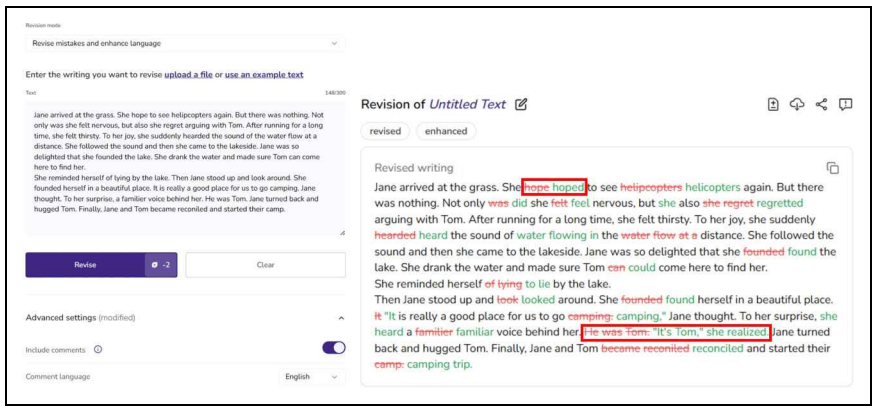

Figure 6. The Original Text and the Revised Version.

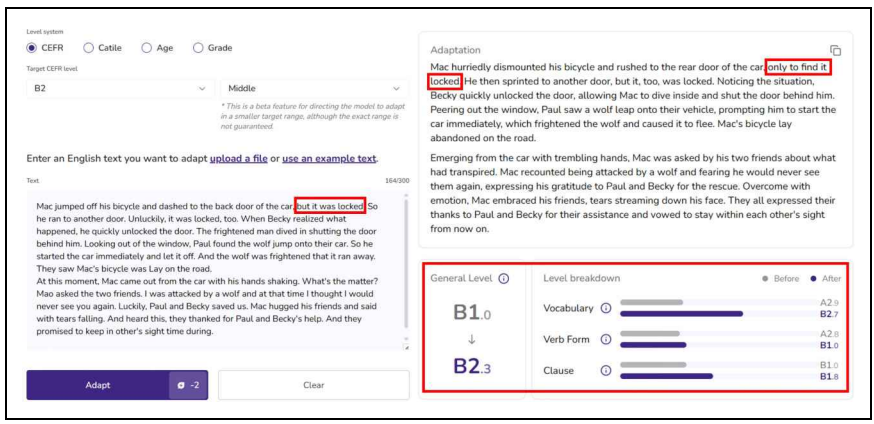

Figure 7. The Original Text and the Upscaled Version.

crucial for language intake (Schmidt, 1990), and the resulting modified output supports subsequent learning (Li and Lu, 2015). After students complete their drafts, teachers can use Cathoven to highlight language errors and provide targeted feedback (see Figure 6), which forms the basis for individual or group correction activities. Students can then revise their work using the feedback. Additionally, teachers can use the level adaptor to model more advanced language use (see Figure 7), motivating students to strive for higher proficiency in future output.

Conclusion

Cathoven is a versatile tool that provides tailored materials for comprehensible input and targeted feedback for high-quality output. However, it has some limitations. First, the generated materials may not always correspond with the desired difficulty level. Teachers can modify the content by adjusting vocabulary and sentence structures to suit students' proficiency. Furthermore, the differences between the original and adapted texts may be unclear. Teachers can use the text analysis function to identify specific changes, ensuring the material is suitable. Whilst Cathoven provides adaptations and revisions, it does not explain the reasons behind them. Teachers should critically assess these modifications to ensure they meet with teaching objectives. Nevertheless, Cathoven remains a valuable tool for pedagogical practice, offering meaningful insights for language teaching.

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