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Advanced Readability Estimation through Educational Content Complexity

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Abstract

This study introduces an innovative approach to readability assessment, integrating cognitive science principles with artificial intelligence to evaluate text comprehensibility. Traditional methods of determining text readability have largely focused on surface-level features, neglecting educational complexity and curriculum alignment of the content. This study proposes a novel method that employs large language models (LLMs) to assess text difficulty by considering content depth and its alignment with educational standards. By leveraging the extensive knowledge encapsulated in LLMs, the method evaluates whether the content of the text corresponds to a specific educational level, ranging from elementary to university. Our readability assessment method provides a more nuanced understanding of text accessibility. The difficulty of the text content is assessed using a combination of language resources to measure the amount of scientific knowledge contained in the text. It promises to enhance educational resources' alignment with learners' capabilities, facilitating more effective learning experiences.