Toward Revision-Sensitive Feedback in Automated Writing Evaluation

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Background

- Automated writing evaluation (AWE) systems provide summative scores and formative feedback on students’ writing
- Natural language processing (NLP) tools extract linguistic, syntactic, semantic, and rhetorical features of text
- Statistical models leverage relationships between text data and quality to drive automated scoring and feedback
- Typically assesses discrete drafts, which may limit feedback to writing products rather than writing processes (e.g., revising)

Standard Approach

Revision-Sensitive Approach

- 85 high school students wrote and revised one essay on “fame” via the Writing Pal ITS
- Essay revisions were annotated by human coders (κ = .81-.92)

Method and Results

- Examined linguistic changes from original to revised draft and their relationship to changes in essay score
- Examined relationships between linguistic changes and annotated revising behaviors

Conclusions and Future Work

- Linguistic changes in essays from original to revised draft were detectable via NLP tools
- The most common linguistic changes were not well aligned to essay quality; indicates that students were not skilled revisers
- Most revision actions also had little impact on the quality or linguistic profile of the essay
- Most meaningful actions were deletions
- Current NLP-based analyses may not be sufficient to capture revising behaviors (and to drive feedback on those behaviors)
- Keylogging tools may be a useful resource

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