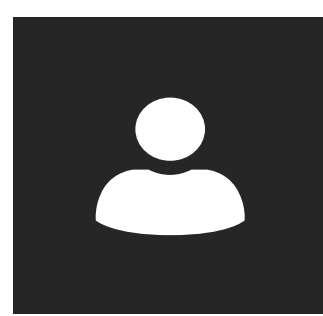


Monitoring the Written Expression Gains of Learners during Intensive Writing Intervention



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BACKGROUND

- To provide effective intensive intervention, we need to be able to efficiently and accurately monitor student skill growth.
- Can open-source automated text evaluation tools be used for this purpose?

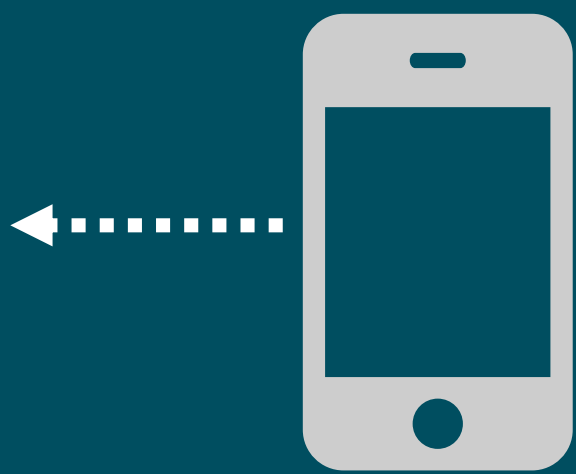
METHOD

- Collected 10-minute picture prompted writing samples from 33 students with learning disabilities (Grades 3-9) in the fall and spring of one academic year.
- Students received 2-3 hours of 1-on-1 intervention per week in a community-based non-profit organization.
- TOWL-4 (Contextual Conventions and Story Composition) in spring.

WRITING SAMPLE SCORING

- Holistic quality ratings based on paired comparisons.
- Automated text evaluation
 - Predicted quality based on ReaderBench scores
 - Spelling and grammar mistakes using GAMET
- Several Written Expression CBM Metrics (TWW, WSC, CWS, CIWS)

Automated text evaluation can monitor growth in written expression for students with learning disabilities.



Take a picture for more information.



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KEY FINDINGS

- Automated text evaluation performed as well as complex hand scoring when predicting writing quality (picture-prompted samples).

Correlations with Holistic Quality (Ideas, Organization)

Scoring Method	Fall	Spring
Automated:		
ReaderBench Model	.95	.85
WE-CBM:		
Total Words Written	.82	.79
Correct Word Sequences	.93	.86

- Correlations with scores on a standardized writing assessment were similar for automated text evaluation and complex hand scoring.

Correlations with TOWL-4 (Cont. Conv. & Story Comp.)

Scoring Method	CC	SC
Automated:		
ReaderBench Model (Fall)	.64	.43
ReaderBench Model (Spr.)	.70	.51
WE-CBM:		
Total Words Written (Fall)	.48	.34
Total Words Written (Spr.)	.59	.45
Correct Word Sequences (Fall)	.66	.45
Correct Word Sequences (Spr.)	.68	.44

- Adding automated indicators of spelling and grammar (ReaderBench + GAMET) improved prediction of standardized writing assessment scores.
 - CC: Spring: $R^2 = .59$ vs. $.49$
 - SC: Spring: $R^2 = .33$ vs. $.26$
- Students showed improvements ($d = .39$) in automated quality scores from fall to spring, $p < .01$

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