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Assessing Readability of College-Level Statistics Textbooks: A Quantitative Lexical and Grammatical Analysis

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Assessing Readability of College-Level Statistics Textbooks: A Quantitative Lexical and Grammatical Analysis

Ariel I. Gonzalez, Amy E. Wagler, and Lawrence M. Lesser

This research was conceived because of the need to create and identify college level statistics textbooks (or other instructional materials) that are written in a manner that is less intimidating and easier to read and understand for students, including English language learners. We selected a representative set of current editions of 15-20 well-known statistics textbooks (that varied in their incorporation of reform or literacy approaches) to assess and compare aspects and levels of readability. We then chose two topics for a manageable focus: measures of center and line of fit. The parts of the textbooks corresponding to these topics were identified by consensus and then digitized using a scanner and software with optical character recognition (OCR) capabilities. The files were then prepared for online lexical software analysis using consistent criteria informed by the research question and identified temporarily by only a code number. After submitting it into the analyzing software (e.g., Coh-Metrix, the Compleat Lexical Tutor), we compared various lexical indicators for the textbooks. Interpretations and implications for choosing and creating written instructional materials will be discussed.
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