The Origin of the Lexile Specification Equation

Hal Burdick
New Technologies, MetaMetrics, Inc.

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The Lexile Specification Equation was first published in January of 1997. The anchor set of items came from a study conducted in a southern state. Results were published in Rasch Measurement Transactions in 1996. Figure 1 shows a plot of the theoretical measures with their empirical Lexile values.

Theoretical Logit = (9.82247*LMSL)-(2.14634*MLWF)-constant where LMSL = log of the mean sentence length and MLWF = mean of the log word frequencies. LMSL and MLWF are used as proxies for syntactic complexity and semantic demand. (Stenner & Burdick, 1997)

The logits anchored in the equation above translate into Lexiles with the following formula:

Lexile calibration = (logit + 3.3)*180 + 200

Figure 1. Plot of Theoretical Lexile Difficulties vs Empirical Lexile Difficulties for the original anchor set of items for the Lexile Framework for Reading. (Burdick & Stenner, 1996)

Since the time of this anchoring study, the sentence ending algorithms of the Lexile Reading Analyzer and the corpus of words for computing word frequencies have been updated. The coefficients and constant for the equation have been recomputed since this original work. The integrity of the scale has been preserved by matching the new equations theoretical mean Lexile and standard deviation to that of the prior equation for an anchor set of books and items for each update. This preservation enables estimates of text complexity produced today to be unbiased with measures produced over a decade ago.

References

