



The Lexile® Framework for Reading Quantifies the Reading Ability Needed for “College & Career Readiness”

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OBJECTIVE

How can we quantify college and career readiness? The Lexile Framework for Reading informs this question by measuring reading materials sampled from various postsecondary text collections, quantifying the associated text complexity, and then statistically summarizing the resulting distribution of readability measures. This approach produces not only a single point estimate of the central tendency of the postsecondary text complexity distribution, but also a useful measure of dispersion, the interquartile range (IQR), which spans the middle 50% of text difficulties in any text complexity distribution. In other words, we can provide a single text complexity target, situated in a band of “typical” text complexity requirements that are characteristic of postsecondary reading experiences.

Although the ability to successfully read and understand complex texts is only one aspect of preparation for college and career choices, it is a fundamental enabling skill without which even routine encounters with advanced work and study may become frustrating or ineffectual.

Key Hypotheses:

Postsecondary texts have a median text complexity of approximately 1300L and an IQR that extends from about 1200L to 1380L.

Research conducted over the last decade and summarized below provides support for this conclusion.

METHODS

Participants (Units of Analysis):

The units of analysis in this study are textual documents found in a variety of postsecondary contexts. The text sources include: those used by Williamson (2008); postsecondary educational texts collected in three state studies (Georgia, Tennessee, and Texas); selected international newspapers summarized by Swartz, Hanlon, Stenner, H. Burdick, and D.S. Burdick (2011); and “Featured” articles selected from Wikipedia. Details about the text collections are provided in the **Procedure** section below.

Procedure:

This study uses source materials that were collected in a series of efforts. Documents range in length from a few paragraphs to entire books. In every case, the entire document was measured. A Lexile text measure is obtained through analyzing the complexity of a piece of text. The Lexile® Analyzer, a software program specifically designed to evaluate the reading demand of text, analyzes the text’s semantic and syntactic characteristics and assigns it a Lexile measure. A multi-step process is required to prepare the text before it is submitted to the Lexile Analyzer for measurement. This program is freely available for non-commercial use at www.Lexile.com. The texts identified for the study were comprised of the text collections described below.

Journal of Advanced Academics. Williamson (2008) investigated the gap between high school textbooks and various reading materials across several postsecondary domains. The resources Williamson used were organized into four domains that correspond to the three major postsecondary endeavors that students can choose (further education, the workplace or the military) and, the broad area of citizenship, which cuts across all postsecondary endeavors. Williamson’s data were made publicly available and are incorporated in this study. For specific details regarding the text collections included in his research, see the published paper (Williamson, 2008).

Postsecondary Education Texts from Georgia. For the Georgia text study, MetaMetrics worked closely with the Georgia Department of Education. The Department provided lists of texts from both the Georgia University system and Georgia Technical colleges. The lists identified the core courses and book titles that first-year students were taking. MetaMetrics then approached the designated publishing houses to secure the titles, offering to allow publishers to use the Lexile measure in return. Almost all titles used in this study were obtained in this fashion. Remaining titles on the lists were ordered from Amazon. Our experience confirmed that working with the state agency is an efficient way to develop the study. MetaMetrics, Inc. (2009) provides complete details regarding the study.

Postsecondary Education Texts from Tennessee. In collaboration with the Tennessee Department of Education, MetaMetrics conducted a survey of textbooks being assigned to students in typical entrance-level courses offered within the public technical, community college, and university systems in Tennessee. The Tennessee Department of Education provided the initial contacts at the University System of Tennessee, the Community College system and Tennessee Technology Centers; the institutional contacts identified the texts used in the study. The texts in the study represent the most widely used texts in introductory “survey” type courses available to all entering freshmen. Texts were chosen from courses that had the highest enrollment for first-year students. A broad range of disciplines was also examined when selecting titles to include favorable career paths. A total of 200 texts were selected for text measurement. Of these, 115 represented the requirements of the University institutions, 46 represented texts associated with community college requirements and 39 texts were from technology schools. Complete details are given in MetaMetrics, Inc. (2011).

Postsecondary Education Texts from Texas. In 2007 and 2008, two successive studies were conducted in Texas to examine the reading demands in various postsecondary institutions – technical college, community college, and 4-year university programs. Under the leadership of Commissioner Raymond Paredes, the Texas Higher Education Coordinating Board (THECB) commissioned these studies to address the focal

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question of “how well does a student need to read to be successful in community colleges, technical colleges, and universities in Texas?” Books were selected and measured in terms of their text complexity using the Lexile Framework for Reading. MetaMetrics, Inc. (2008) provides a detailed description of the data collection strategy used in the Texas study as well as a complete listing of the books selected for the study.

International Newspapers. English is widely used for business and technical communications throughout the world; hence, there is justification for examining the text complexity of online English language newspapers sampled from around the world. MetaMetrics wishes to continue to elaborate and expand our knowledge of the text continuum to support a global interpretation for “college and career readiness”—e.g., “global preparedness.” Swartz, Hanlon, Stenner, H. Burdick, and D. S. Burdick (2011) describe the collection of textual samples from international newspapers and present an analysis of the associated text complexity measurements.

“Featured” Articles Selected from Wikipedia. Wikipedia is a free online encyclopedia that is comprised of articles written by anonymous Internet volunteers, largely amateurs, who write without pay. Writers with expert credentials are given no additional weight with respect to their contributions. This characterization of Wikipedia is distilled from material on its website ([Wikipedia:About](#)). Certain articles, designated “Featured” articles, are identified as the best articles in Wikipedia. “Featured” articles are defined at ([Wikipedia:Featured articles](#)). A sample of Featured articles was selected from Wikipedia, spanning a variety of content categories.

Measures:

Lexile measures (Stenner, Burdick, Sanford & Burdick, 2007) are measures of reader ability and text complexity that are based on semantic and syntactic factors and are reported on a developmental scale. Independent psychometric studies of the Lexile scale (Mesmer, 2007; White & Clement, 2001) indicate that it is a valid and reliable measure of reader ability and text complexity.

A Lexile measure is the numeric representation of an individual’s reading ability or a text’s complexity (or, difficulty), followed by an “L” (for Lexile). The Lexile scale ranges from 0L and below for emerging readers and beginning texts to above 1600L for advanced readers and texts. Values at or below 0L are reported as “Beginning Reader” (BR).

Extensive information about the development of the Lexile Framework for Reading can be found in the “Research” section of the Lexile website ([www.Lexile.com](#)).

ANALYSES

SAS PROC UNIVARIATE was used to produce distributional statistics for the various collections of Lexile measures examined for this study. The text collections were analyzed individually and collectively. There are two fundamental results—a revised postsecondary text continuum and an updated estimate of the text complexity associated with college and career readiness. These results are summarized below.

RESULTS & DISCUSSION

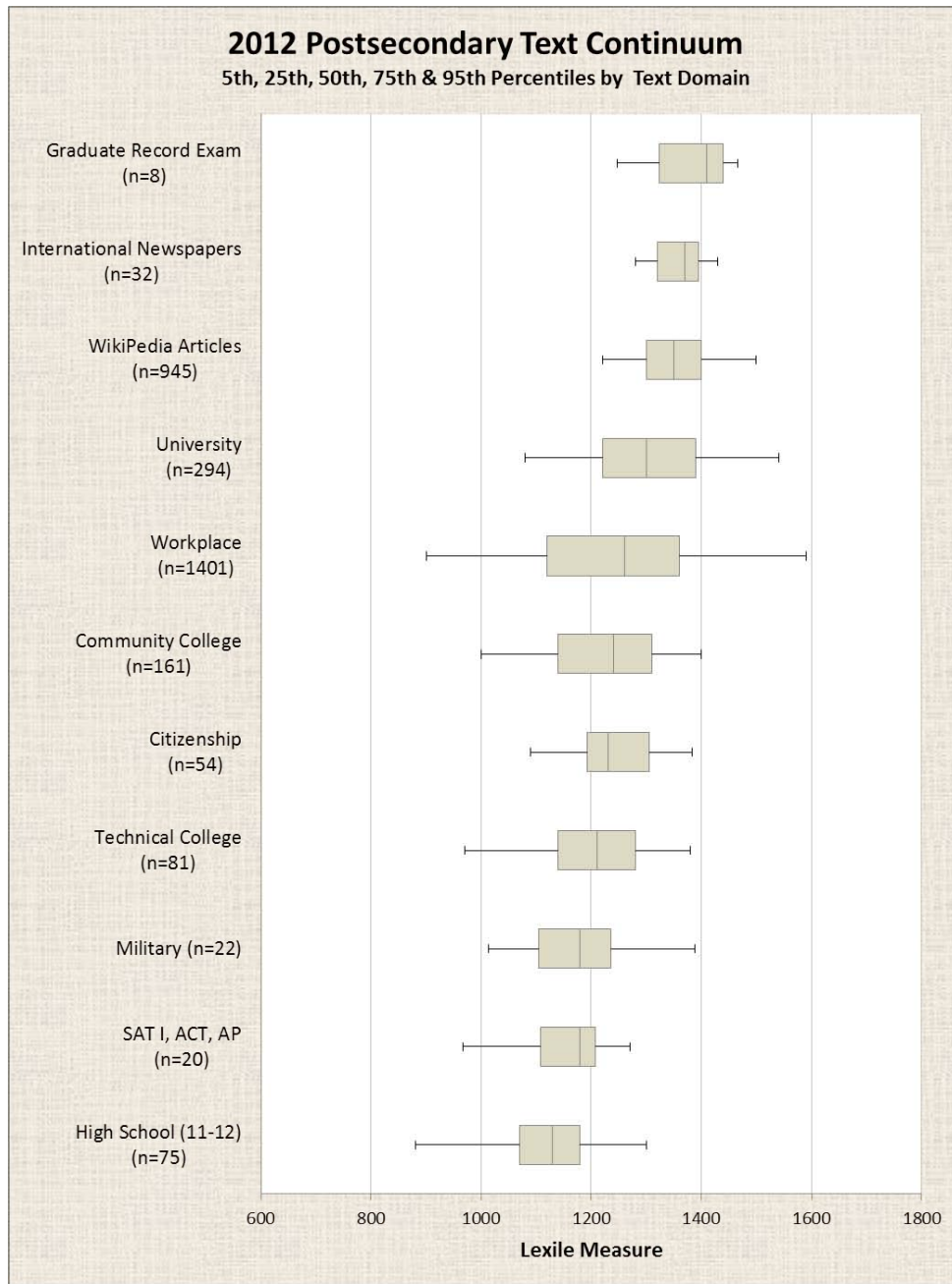
Analyses of the individual text collections are summarized in Figure 1. The figure displays a collection of box-and-whisker plots, one for each postsecondary text collection and one for high school texts (as a baseline reference). The text collections are shown in order of increasing median text complexity. The “box” part of each plot represents the interquartile range (IQR), with the median marked by the vertical midline within each box. The “whiskers” extend to the fifth and ninety-fifth percentiles of the respective text distributions.

This new postsecondary text continuum is different from the earlier results of Williamson (2008) in several respects:

- Postsecondary education texts have been augmented by the texts from the studies in GA, TN, and TX. This has produced a noticeable lowering of the University and Community College text complexity distributions, while introducing a new category of postsecondary education—Technical College—with still lower text measures.
- Two new categories of texts are introduced—International Newspapers, and Wikipedia Articles—both of which appear to have associated text difficulties exceeding those associated with the University and other Postsecondary Educational institutions.
- Workplace and Community College texts have switched places in the ordering.

The second result of the analyses specifically addresses the definition of college and career readiness. Based on the combined analysis of the pooled postsecondary text collections (N=2,990), it was found that the median text difficulty is 1300L and the IQR extends from 1200L to 1380L. To the extent that these text collections are generalizable, we may say that typical postsecondary reading materials have text complexity measures ranging from 1200L to 1380L; the median text complexity measure is 1300L. These estimates represent the text demand that high school graduates may encounter when they matriculate into the postsecondary world. These quantifications, when viewed as the reading ability of students who are well matched to the text demands, represent the level of reading ability required for college and career.

Figure 1



Limitations of the Study/Areas for Future Research:

- Text collections varied in homogeneity; one or more (e.g., University) exhibited bimodality. Is this evidence that some domains have not been adequately sampled?
- There is no sampling frame readily available for postsecondary text studies. Thus probability sampling is problematic.
- Sample sizes vary across text collections by nearly two orders of magnitude—some are less than 30.
- There is no definitive specification to identify text collections that *should* characterize postsecondary text requirements. For example, in what sense are international newspapers a “requirement” of postsecondary success? When does that requirement first apply to individuals?
- Texts vary greatly in length; consequently, text measures vary in reliability. Measurement error was not addressed in the analysis.

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- Prevalence of a text in the postsecondary domain(s) was not incorporated into the analysis, though it was a factor in text selection.
- Are “college and career ready” and “globally prepared” the same thing?

Some additional questions are relevant when “global preparedness” is the issue of interest. Some of them, which are not addressed in the present research, are:

- 1) Who is the target student of interest?
- 2) What are relevant characteristics of admissible postsecondary texts?
- 3) How are domain definitions affected by “Global” purpose?
- 4) Should text complexity research focus on the gap between high school and postsecondary texts, or on the postsecondary text continuum? Does it make a difference?

An important question that remains is: How sensitive are our inferences regarding postsecondary text complexity to the selection of particular collections of texts for inclusion in the study? We have seen that the text continuum as presented in the current study is different from the one reported in Williamson (2008) in a number of ways. This is undoubtedly due in part to the enhanced and expanded text collections used in this study compared to those used in the earlier work. Unfortunately, we have no criterion for deciding when we have the “right” answer. This ultimately affects our belief regarding the magnitude of any gap between high school and postsecondary reading requirements.

It should be acknowledged that the investigation of text complexity and the characterization of the text continuum from beginning readers’ experiences to those of adults in the postsecondary world is a continuous and evolving endeavor, not only because there is no sampling frame for the research, but because the real world can change while we are exploring the question.

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