Research Brief

An Examination of the Text Complexity of EFL Graded Readers

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OBJECTIVE

This study examined the text complexity of five graded-reader series for English as a foreign language learners to ascertain their comparability across publishers.

There were two research hypothesis, i) that within each series, the median text complexity monotonically increases as the level increases; and ii) that the levels across series indicate a similar level of text challenge based on the Lexile scale of text complexity.

BACKGROUND

It is well-accepted that the more an individual reads the more he or she will experience gains in comprehension and fluency (Stoller, 2015; Maruyama, 2009; Robb & Kano, 2013). However, students learning to read in their native language come to the task with a number of benefits not experienced by learners of a foreign language. The learner of a foreign language often encounters reading materials that include unknown vocabulary, idioms, difficult literary devices, and other language elements that may make comprehension more challenging (Wu and Marek, 2013; Lui, 2014). The development of "graded readers" is one way publishers have attempted to make learning English a more predictable and ultimately productive and efficient experience for EFL learners.

Early graded readers, as envisioned by Michael West (1955), were to be read for pleasure by learners, reiterating known vocabulary, building confidence, and encouraging a desire to continue in their language study. As the name implies, a graded reader is one text within a collection of simplified books or readers that have been organised into increasing levels of difficulty or grades for use by language learners (Hill and Thomas, 1988). Publishers aim to create a framework for authors to work within in an effort to control vocabulary, syntax, and structure while producing reading material that is of good quality and interest to the learner. As noted by Udorn Wan-a-ram (2012), in theory the progressive complexity of the graded reader series serve as "stepping stones" to carry beginning learners to near authentic texts through steady growth.

Understanding the text complexity of these graded readers is the first step in understanding how the texts within a series relate to each other in each publisher's leveling scheme and also provide a quantifiable source of comparison across publishers. The text complexity data serves as a foundation for further study into the composition of graded readers.

MATERIALS

Five graded-reader series were analysed in this study. The target audiences for these series were young adults/adults engaged in learning English as a foreign language (EFL). Each series comes from an English language teaching (ELT) publisher with global prominence and is referred to by a letter rather than the publisher name. British English and American English texts were included. A letter and colour scheme was employed to reference each series: Series A-Black, Series B-Blue, Series C-Red, Series D-Green, and Series E-Purple. **Table 1** shows the final sample size (N = 568) by series and level.

Three of the five series (Series A, B, and C) were studied in their entirety, with all continuous prose passages included in the analyses. A sample of graded readers from Series D and E were included in the analyses because the total volume of the offerings of Series D and E was much larger than for Series A, B, and C. Care was given to ensure that all texts utilised the same leveling under the publisher's current guidelines (e.g., same number of headwords, level names).

Table 1: Number of graded readers in the final sample.

Series	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
A	11	14	15	14	14	14	12
B				26	30	19	19
C	13	30	26	19	41	19	
D	25	24	20	26	12	11	9
E	10	10	14	18	23	20	10

PROCEDURE

For purposes of comparison, the texts were placed into study levels 1 through 7 based on their published level of difficulty. Level 1 represents the least difficult readers and level 7 represents the most advanced readers in each series. Texts of similar published levels were placed in the same study level. For example, entry level texts from Series A, C, D, and E were placed in level 1. All series except Series B start at a similar "beginner" level. The lowest level of Series B began at an intermediate level, so the first level was assigned to level 4 to align with the intermediate level of the other series.

Each graded reader was converted to electronic text and prepared for analysis. All non-prose text (indices, glossaries, page numbering) was removed. The collection of electronic texts was then submitted to the Lexile Analyser.

MEASURES

The Lexile® Framework is a scientific way to match learners with text using the same developmental scale. The Lexile (Stenner, H. Burdick, Sanford & D.S. Burdick, 2007) is a measure of text complexity that is based on semantic and syntactic factors. Independent psychometric studies of the Lexile scale indicate that it is a valid and reliable measure of learner ability and text complexity (Mesmer, 2008; White & Clement, 2001).

A Lexile measure is the numeric representation of an individual's reading ability or a text's complexity followed by an "L" (for Lexile). The Lexile scale is a developmental scale, ranging from below 200L for beginning learners and reader materials to above 1600L for advanced learners and materials.

Extensive information about the development of the Lexile Framework for Reading can be found on the Lexile website (www.Lexile.com/research-and-publications).

ANALYSIS

Each graded-reader text received a Lexile measure from the Lexile® Analyser software. The Lexile measures were then grouped according to series and level. Descriptive statistics for the Lexile measures of graded-reader texts were calculated by level within a series: median, minimum, maximum, and selected percentiles. The percentiles of the text complexity measure distributions provided the basis for constructing the box-and-whisker plots. An ANOVA procedure was performed to evaluate any significant differences in the level means.

RESULTS

Table 2 displays the text complexity (Lexile measure) descriptive statistics by series and level. The median Lexile measures for Series A, B, and E increase monotonically as the level increases. In contrast, the median Lexile measures for Series C and D did not increase monotonically across all levels. For Series C, the median Lexile measure for level 4 (620L) is higher than the median Lexile measure for level 5 (570L); and, for Series D, the median Lexile measure for level 5 (810L) is higher than the median Lexile measure for level 6 (750L).

While the median Lexile measures for Series A, B, and E increase monotonically, the rate of increase is not consistent from level to level as seen in **Figure 1**. For example, Series A increases 30L from level 1 to 2, followed by a nearly 150L increase from level 2 to 3. There is very little change from level 4 to 6 followed by an approximately 100L increase from level 6 to 7. No two series have the same Lexile growth pattern. The distribution of Lexile measures for each series and level is displayed in box-and-whisker format in **Figure 2**.

Table 3 shows the text complexity (Lexile measure) means and standard deviations by series and level. An ANOVA procedure was conducted to compare the series' Lexile measure means for each level. The results indicate that the series' Lexile measure means were significantly different for levels 2, 3, 4, 5, 6 and 7 ($p < .05$). However, at level 1 the means of the five series did not reach the level of statistical significance at the $p < .05$ level.

Table 2: Interquartile Statistics by Series and Level.

Series		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
A	*n*	11	14	15	14	14	14	12
	25th Percentile	340L	345L	490L	623L	658L	690L	765L
	Median	290L	305L	480L	590L	595L	600L	695L
	75th Percentile	230L	250L	395L	543L	545L	550L	668L
B	*n*				26	30	19	19
	25th Percentile				700L	825L	1005L	1125L
	Median				755L	905L	1040L	1180L
	75th Percentile				798L	945L	1065L	1210L
C	*n*	13	30	26	19	41	19	
	25th Percentile	190L	283L	410L	485L	505L	520L	
	Median	230L	320L	430L	620L	570L	620L	
	75th Percentile	240L	358L	458L	840L	628L	650L	
D	*n*	25	24	20	26	12	11	9
	25th Percentile	200L	405L	545L	610L	745L	675L	770L
	Median	270L	465L	655L	675L	810L	750L	810L
	75th Percentile	340L	598L	780L	788L	835L	825L	910L
E	*n*	10	10	14	18	23	20	10
	25th Percentile	313L	313L	365L	465L	570L	648L	793L
	Median	345L	380L	445L	615L	650L	720L	830L
	75th Percentile	365L	525L	538L	718L	825L	840L	915L

Figure 1. Median Lexile measures, by series and level.

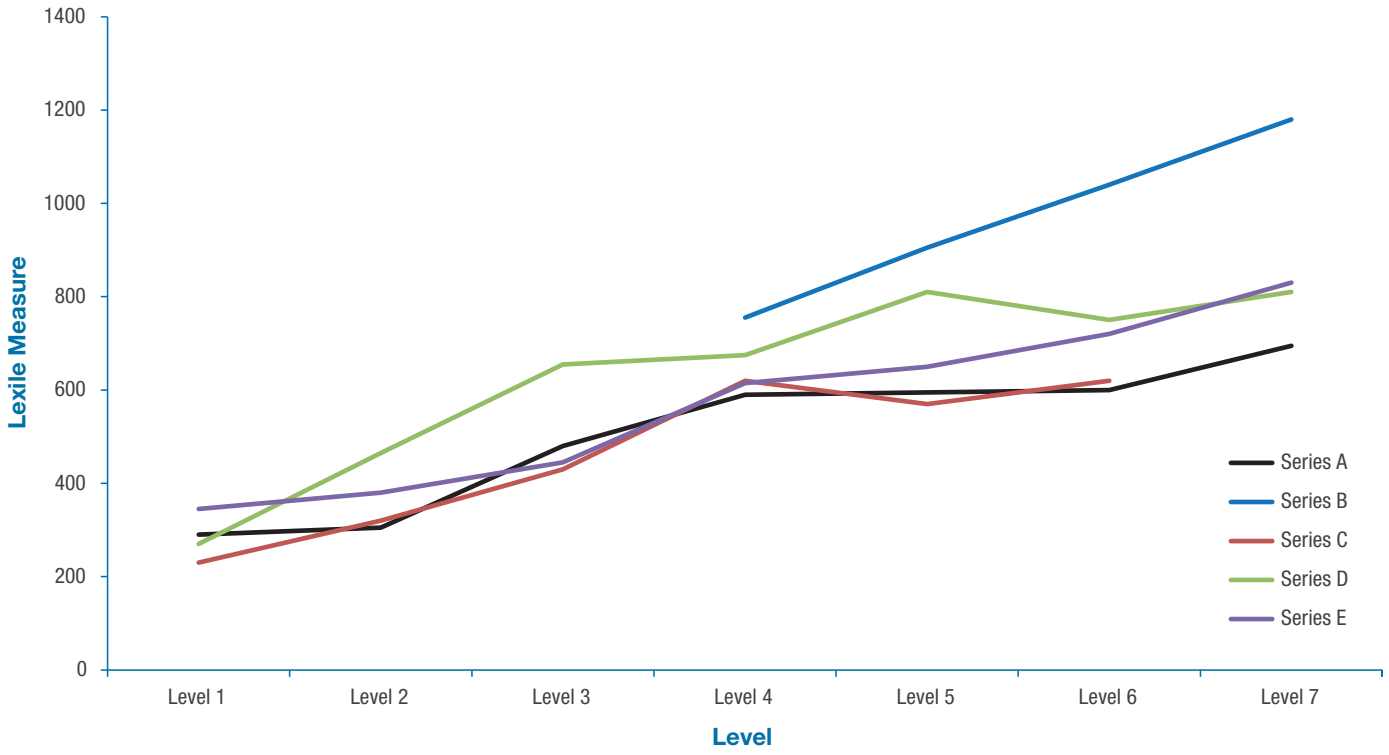

Figure 2. Box-and-whisker plot of Lexile measure distribution, by series and level.

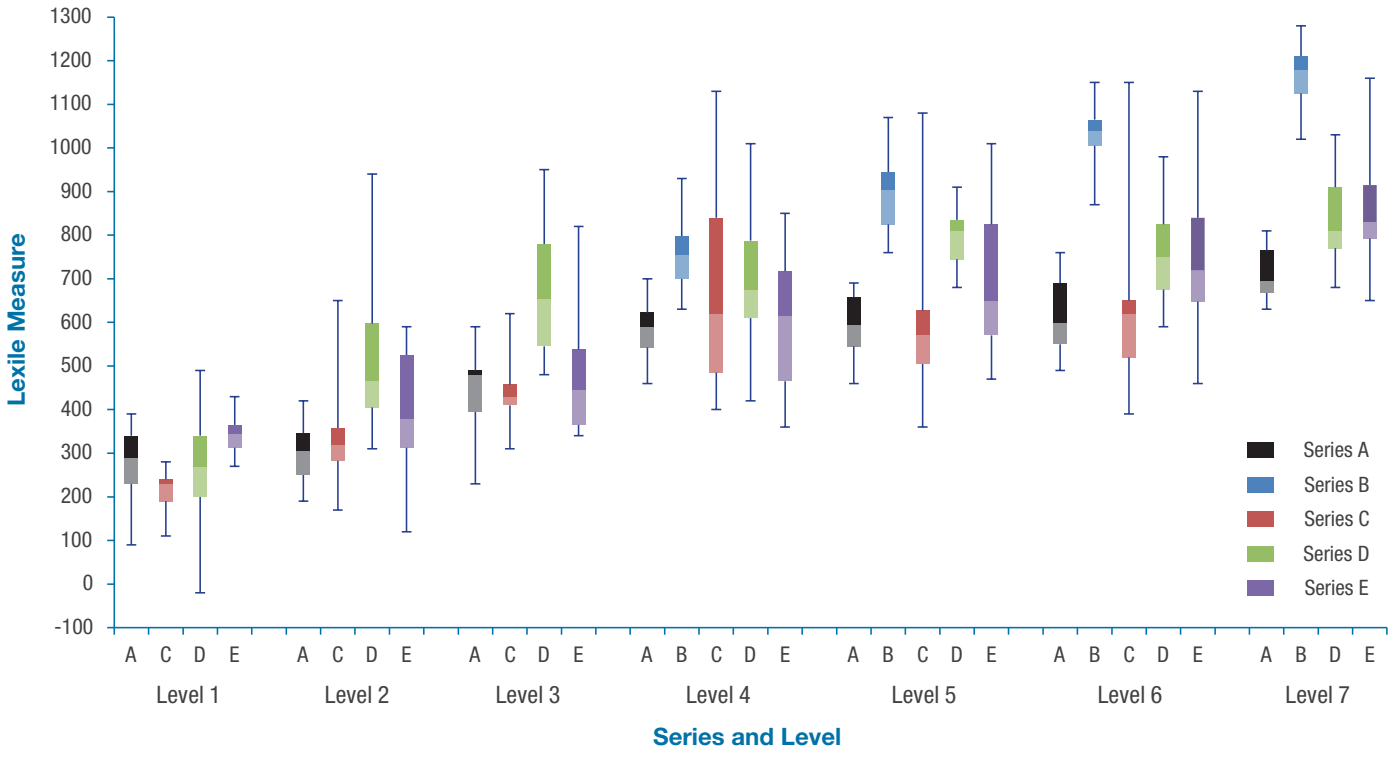

Table 3: Mean Lexile measures and standard deviations by series and level.

Series		Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
A	*Mean*	*269L*	*300L*	*447L*	*582L*	*594L*	*616L*	*712L*
	SD	(101.73)	(65.75)	(99.76)	(70.95)	(70.24)	(94.59)	(65.89)
B	Mean				754L	893L	1031L	1165L
	SD				(66.46)	(73.69)	(70.23)	(71.13)
C	*Mean*	*217L*	*334L*	*437L*	*668L*	*578L*	*625L*	
	SD	(46.44)	(100.78)	(60.92)	(229.40)	(129.63)	(178.52)	
D	Mean	255L	543L	671L	701L	798L	763L	833L
	SD	(143.99)	(196.69)	(140.39)	(149.48)	(69.56)	(124.26)	(122.27)
E	Mean	342L	396L	489L	602L	686L	754L	852L
	SD	(43.67)	(149.90)	(146.70)	(152.67)	(169.86)	(167.47)	(139.03

DISCUSSION/CONCLUSION

In conclusion, neither research hypothesis was fully supported. The median text measures did not increase monotonically across all levels for all series, and the Lexile measures within each level varied substantially, with significant differences found for the majority of levels. These findings suggest that educators and learners face a significant challenge when attempting to make generalisations about graded readers, given the large distribution of text complexity in each level and across series. An intermediate text from one series may be very different from an intermediate text from another series. However, the novice English language learner may experience the least difficulty selecting materials from various series as there seems to be the most agreement on the complexity of texts at Levels 1 and 2 for the series included in this study. Future research should explore the usefulness of Common European Framework of Reference leveling and headword counts as a means of comparison among graded readers.

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