The Relationship Between Lexile Text Measures and Early Grades Fountas & Pinnell Reading Levels

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OBJECTIVE

A number of text analysis systems provide information about the level of challenge a reader is likely to encounter when reading a particular text. As educators seek appropriate reading materials for their students, they may have text leveling information from one system and need to understand how it compares to another system to select the most appropriate materials for their students. This research attempts to demonstrate the relationship between two such leveling frameworks, The Lexile® Framework for Reading and the F&P Text Level Gradient (commonly called "Fountas and Pinnell"). For example, a teacher may know a student's Lexile® measure, but have a classroom library with books labeled only with Fountas & Pinnell reading levels. The teacher must understand how Fountas & Pinnell reading levels are related to Lexile text measures. The research described in this brief was undertaken to explore the criterion-related validity of Lexile text measures by examining the relationship between Lexile text measures and Fountas & Pinnell reading levels.

The research focused on one primary question.
- Is there a strong, positive relationship between Lexile text measures and Fountas & Pinnell reading levels for books indicating that the two systems measure a similar construct?

In an extension of the primary research, researchers also examined the Lexile indicator profiles to understand the variation within Fountas & Pinnell reading levels.

BACKGROUND

The Lexile Framework for Reading

The Lexile Framework for Reading is a psychometric system for matching readers with texts of appropriate difficulty. With the Lexile Framework, both the reader and the text can be placed on the same measurement scale. 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 for reading that ranges from below 0L for beginning readers and beginning texts to above 2000L for advanced readers and texts. Lexile measures below 0L are reported as BRXXXL (e.g., BR160L). Below 0L, values that indicate greater distance from 0L indicate less reading challenge, so a text measuring BR160L would present less reading challenge than a text measuring BR20L. Educators are encouraged to choose texts within a student's Lexile reader range rather than focus on a single Lexile measure. The Lexile reader range is from 100L below to 50L above the student's specific Lexile measure. Texts above and below the Lexile reader range may be appropriate for specific instructional uses or readers. For example, a teacher could select texts with Lexile measures more than 50L above a reader's measure if scaffolding were provided to aid comprehension, or if the teacher knew that the student had a particular interest in the topic and would not be discouraged by an additional reading challenge. Easier texts could be selected for students who would benefit from fluency practice with texts that present little comprehension challenge.

A *Lexile text measure* (e.g., for a book or article) is obtained through analyzing the complexity of the text. The Lexile Analyzer® uses an algorithm specifically designed to evaluate the reading demand of text through the analysis of selected text characteristics. The Lexile Analyzer has recently been enhanced to incorporate more information about text complexity for texts designed for early reading. In general, texts in the early-reading range are evaluated according to nine variables. These nine variables were identified through empirical studies that involved students reading text and teachers evaluating text complexity. They are organized into four primary early-reading indicators of text complexity: the structure indicator, the syntactic indicator, the semantic indicator, and the decoding indicator. In some cases, the four early-reading indicators that describe a specific text may be reported along with the Lexile measure in order to guide educators as they select reading materials. A profile of the four early-reading indicators depicts the reading demand of the text when compared to a representative set of K–2 texts. High demand indicates that the features of the specific text present a high level of challenge as compared to other K–2 texts. Low demand indicates that the text's features are less challenging for readers. More detailed information about the early-reading indicators and their development is found on Lexile.com and in Fitzgerald, Elmore, Koons, Hiebert, Bowen, Sanford-Moore, and Stenner (2015) and Fitzgerald, Elmore, Hiebert, Koons, Bowen, Sanford-Moore, and Stenner (2016).

A *Lexile reader measure* is typically obtained by administering a test of reading comprehension to the reader. When a test has been linked with the Lexile Framework through a field study or when the test was constructed using the Lexile Framework, a Lexile measure for the reader can be reported. Educators and parents can use the Lexile reader measure and the Lexile text measure to select appropriate reading materials for students.

Information about the development of the Lexile Framework for Reading can be found on Lexile.com.

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The F&P Text Level Gradient

The Fountas & Pinnell guided reading program is a highly scaffolded reading instructional program designed to match students with a series of texts that become increasingly challenging as the student moves through the series. The texts used in the program are leveled according to the F&P Text Level Gradient along a scale ranging from A to Z+ with A representing text designed for the earliest readers and Z+ representing texts appropriate for students in high school and beyond.

Within the Fountas & Pinnell program, text levels are assigned to a location (Fountas & Pinnell reading level) on the text level gradient according to a system that includes 10 key features: genre/form, text structure, content, themes and ideas, language and literacy features, sentence complexity, vocabulary, words, illustrations, and book and print features. In order for a text to receive a level, trained individuals first independently review and assign a level to the texts (e.g., A, B, C) based on the 10 key text characteristics. Then, a group convenes and through consensus they assign a single level to each text.

The reading level of a student is determined using benchmark assessments or other systematic observations. Students with similar reading levels and instructional needs are placed into groups and the teacher selects appropriate texts based on the Fountas & Pinnell reading level of the student and text.

Additional information about the Fountas & Pinnell program is found at fountasandpinnell.com.

METHODS

The research informing the recent early grades text analysis enhancements to the Lexile Analyzer focused on texts designed for students in Kindergarten through Grade 2. Therefore, the current research focused on the Fountas & Pinnell reading levels identified as typical for students in the same grades. These levels are identified as levels A through M (Fountas & Pinnell, 2017). All titles from the official Fountas & Pinnell leveled book list that were found on fountasandpinnellleveledbooks.com, and that had associated Lexile text measures, were identified through an ISBN match. The set of 974 identified texts in levels A through M were then submitted to the Lexile Analyzer to receive updated Lexile measures, as well as early-reading indicator profiles, from the enhanced Lexile Analyzer.

The Spearman correlation between the Lexile measures and the Fountas & Pinnell reading levels of the texts was calculated to determine the strength of the relationship between the systems. Descriptive statistics for the Lexile measures were calculated for the texts associated with each Fountas & Pinnell reading level.

The early-reading indicator profiles for books within each Fountas & Pinnell reading level were produced for each text with the enhanced Lexile Analyzer and examined to determine whether the early-reading indicator profiles for all texts within the same level are similar. Where the early-reading indicator values differ, they can provide insight into text complexity beyond the information already provided by the Lexile text measure or the Fountas & Pinnell reading level.

RESULTS & DISCUSSION

The Spearman correlation coefficient describing the relationship between Fountas & Pinnell reading levels and Lexile text measures for the 974 books was $r_s = 0.84$, which indicates a strong positive relationship between the ordering of the two text-leveling systems. Because Fountas & Pinnell reading levels are categorical variables and Lexile measures are continuous variables, some variation in the Lexile measures of texts within Fountas & Pinnell reading levels is expected. Variation between the systems also occurs because the two systems rely on different, though overlapping, sets of text characteristics when determining text complexity.

For the sample of texts used in this study, the mean, standard deviation, selected percentiles, interquartile range (IQR), and 5th to 95th range of the Lexile text measures for each Fountas & Pinnell reading level are shown in *Table 1*. The strong positive correlation between the Lexile text measures and the Fountas & Pinnell reading levels suggests that as the Fountas & Pinnell reading level of a text increases, the Lexile measure of the text also increases. The standard deviations of the Lexile text measures within the Fountas & Pinnell reading levels indicate fairly consistent within-level variation across the Fountas & Pinnell reading levels. The standard deviations generally fall below 90L, with a low of 38L in level A and a high of 145L in level C.

Additional perspectives on the variation of Lexile text measures within Fountas & Pinnell reading levels are provided by the IQRs and the 5th to 95th percentile ranges. The patterns in the Lexile text ranges reflect the variations in standard deviations. For both the IQRs and the 5th to 95th percentile ranges, the smallest range occurs in level A (40L, 107L), and the largest in level C (145L, 403L). The ranges for all other levels are relatively consistent, with IQRs of 60L to 120L and 5th to 95th percentile ranges of 207L to 284L.

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Table 1. Selected statistics for Fountas & Pinnell reading levels A-M.

Guided Reading Level	N*	Mean	Standard Deviation	5th Percentile	25th Percentile	50th Percentile	75th Percentile	95th Percentile	Interquartile Range (IQR) 25th – 75th	5th – 95th Percentile Range
A	27	BR55L	42L	BR120L	BR75L	BR60L	BR40L	0L	35L	120L
B	49	13L	83L	BR80L	BR50L	BR10L	40L	176L	90L	256L
C	39	112L	146L	BR52L	25L	80L	180L	351L	155L	403L
D	45	149L	90L	4L	100L	140L	180L	288L	80L	284L
E	51	228L	77L	135L	170L	210L	280L	355L	110L	220L
F	69	299L	82L	190L	240L	290L	360L	432L	120L	242L
G	69	339L	96L	194L	280L	340L	400	472L	120L	278L
H	78	381L	91L	229L	330L	380L	430L	512L	100L	283L
I	77	443L	77L	308L	410L	450L	490L	552L	80L	244L
J	95	474L	73L	335L	445L	480L	510L	580L	65L	245L
K	147	507L	75L	390L	470L	520L	563L	629L	93L	239L
L	104	527L	70L	422L	480L	520L	560L	647L	80L	225L
M	124	554L	92L	422L	500L	560L	600L	697L	100L	275L

Visual representation of the strong correlation and the variation in Lexile measures across Fountas & Pinnell reading levels is shown in the box-and-whiskers plot in *Figure 1*. The box in each box-and-whiskers plot depicts the IQR, with the bottom of the lighter portion of the box at the 25th percentile of the distribution of text measures, the line between the shaded portions of the box at the median (50th percentile), and the top of the darker portion of the box at the 75th percentile. The bottom whisker depicts the text measure at the 5th percentile of the distribution of text measures, and the top whisker depicts the text measure at the 95th percentile. The pattern shows steadily increasing Lexile text measures across Fountas & Pinnell reading levels for each represented percentile except the 95th percentile of Level C (351L), which has a greater value than the 95th percentile values of the following two Fountas & Pinnell reading levels (D: 288L, E: 350L). Although the data show a general trend of increasing Lexile text measures across the key points in the distributions for each Fountas & Pinnell reading level, variation in Lexile text measures within each level produces a range of Lexile measures for texts at each Fountas & Pinnell reading level. Because the Fountas & Pinnell reading levels, with 13 levels A-M, are "larger-grained" than the Lexile text measures, which range from below 0L to nearly 700L for books in the study, some variation within Fountas & Pinnell reading levels is expected.

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Figure 1. Lexile measures of study texts by Fountas & Pinnell reading levels.
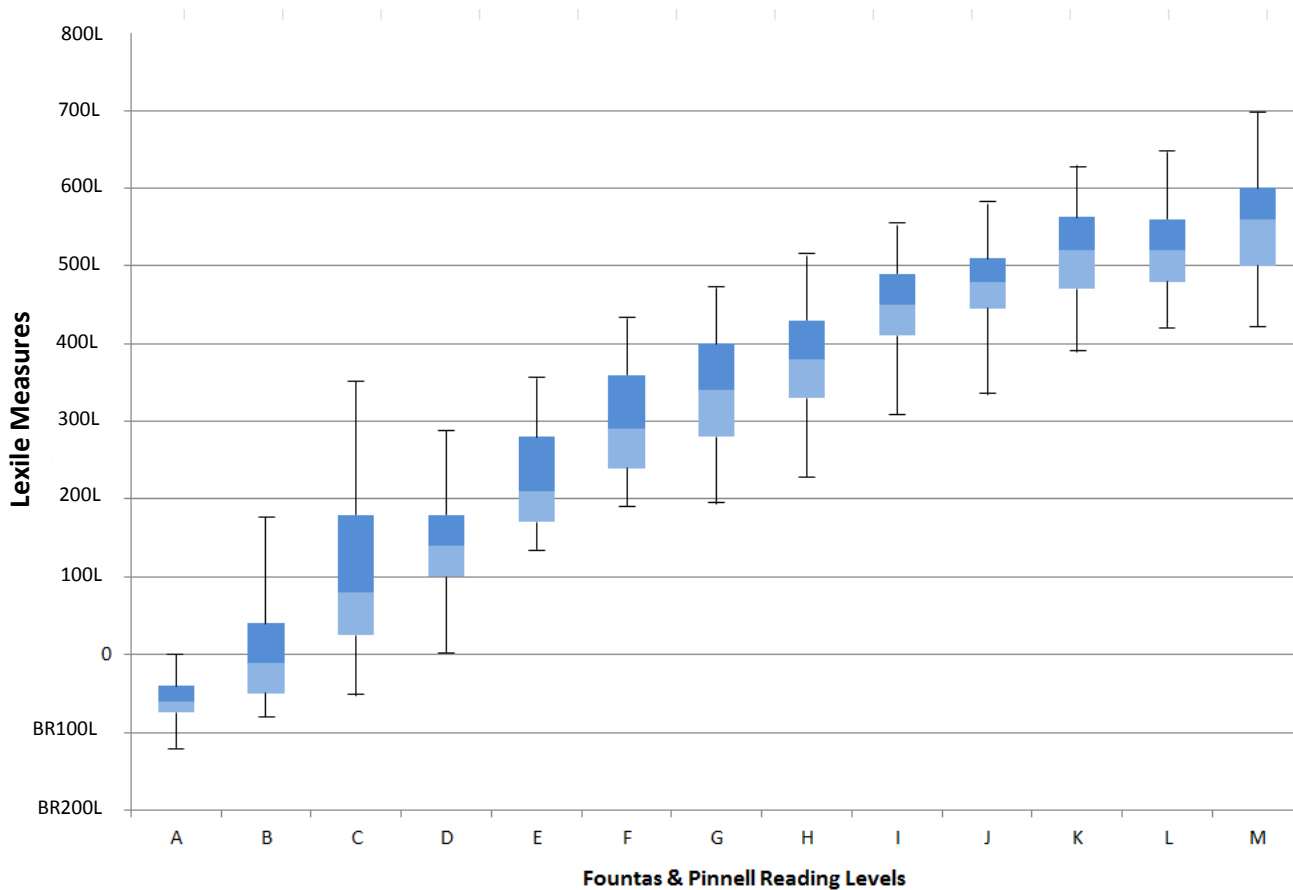
When making decisions about book selections, educators should think about the Fountas & Pinnell reading level and/or Lexile text measure as a starting point. In addition to considering the student for whom the text is being selected (e.g., interests, motivation) and the specific goals for reading, educators may also consider specific text characteristics. The indicator profiles produced by the enhanced Lexile Analyzer provide an additional source of information about text characteristics. *Table 2* includes three examples from Fountas & Pinnell reading level E. The first book, *Amy's Airplane*, has a Lexile measure of 330L and is expected to present more reading challenge to a student than the two other books in *Table 2*, which both have Lexile measures of 160L.

Table 2. Indicator profiles for books at the same F&P reading level.

Book Information	Indicator Profile for Full Text	Sample Text
Amy's Airplane F&P reading level: E Lexile Measure of Full Text: 330L		Amy only wanted one thing. She did not want dolls. She did not want toys. She wanted an airplane. Amy learned about airplanes and dreamed about airplanes. She even acted like an airplane! "I'm sorry, Amy," said her mother. "We can't buy an airplane." Amy nodded. "I'm sorry, Amy," said her father. "We can't buy an airplane." Amy nodded. "Look, Amy!" said Amy's sister. "We can make an airplane!" Amy smiled. Amy's sister Jayla got some paper.

Dress-Up F&P reading level: E Lexile Measure of Full Text: 160L		I like to dress up. It's fun to see what I can be. I can be a cat. See my soft fur? I like to nap. I like to purr. I can be a man. See my big hat? I can be thin. I can be fat. I am a small bird. I have a nest. I like to eat bugs, but worms are best. Now I'm a star. My dress is red.
Brushes F&P reading level: E Lexile Measure of Full Text: 160L		What's this brush for? It's for brushing a dog. What's this brush for? It's for washing a bottle. What's this brush for? It's for brushing a horse. What's this brush for? It's for washing cars. What's this brush for? It's for cleaning nails. What's this brush for? It's for sweeping up crumbs. What's this brush for? It's for brushing away flies!

The indicator profile for *Amy's Airplane* shows that, relative to typical books in the K–2 range, the text's structure, syntactic, and decoding indicator demands are moderate, and the semantic indicator demand is low. The sample text shows that although there is some repetition across sentences, many sentences are unique and use a variety of words. While many of the words are relatively familiar, which has led to the lower semantic demand, the presence of numerous multisyllabic words contributes to a higher decoding demand.

In contrast to *Amy's Airplane*, both *Dress-Up* and *Brushes* have lower demands on almost every indicator. *Dress-Up* is part of a phonics-based series designed to give students practice reading relatively easy decodable words. The focus on single-syllable, accessible words is reflected in the indicator profile with a very low demand on the decoding and semantic indicators. The variation in words across sentences is reflected in the higher demand on syntactic and structure indicators. In contrast, *Brushes* has a higher decoding demand because of the limited number of decodable monosyllabic words and the use of some polysyllabic words. To offset the higher decoding demand, the sentences are highly structured and the same basic pattern is repeated across sentences. The presence of repetition across sentences in *Brushes* is reflected in the very low structure indicator. As a result, although both texts have the same overall Lexile measure of 160L and both are placed in Fountas & Pinnell reading level E, their early-reading indicator profiles are markedly different. The early-reading indicator profiles are an additional source of information educators can use to tailor book selections and provide a variety of reading experiences to students within a single Fountas & Pinnell reading level.

CONCLUSION

The strong relationship between Lexile text measures and Fountas & Pinnell reading levels suggests that the Lexile text measure and the F&P text level gradient describe text levels similarly. Although there is a strong correlation between the systems, the variation in Lexile measures within and across Fountas & Pinnell reading levels precludes a direct translation from one system to the other. The indicator profiles provide insight into why two texts at the same Fountas & Pinnell reading level may have different Lexile measures. They also provide insight into the text characteristics that are likely to create varying challenges for readers even though the texts have similar Lexile measures and are placed in the same Fountas & Pinnell reading level. As educators seek ways to utilize Lexile measures within a program that includes Fountas & Pinnell reading levels for books, they can consider the early-reading indicator profiles for additional information to better match readers with appropriate texts.

REFERENCES

Fitzgerald, J., Elmore, J., Koons, H., Hiebert, E. H., Bowen, K., Sanford-Moore, E. E., & Stenner, A. J. (2015). Important text characteristics for early-grades text complexity. Journal of Educational Psychology, 107, 4-29.

Fitzgerald, J., Elmore, J., Hiebert, E.H., Koons, H., Bowen, K., Sanford-Moore, E.E., & Stenner, A.J. (2016). Examining text complexity in the early grades. *Phi Delta Kappan,* 97, 60-65.

Fountas, I. & Pinnell, G.S. (2017). *Instructional grade-level equivalence chart*. Retrieved March 13, 2017 from (http://www.fountasandpinnell.com/shared/resources/FP_FPL_Chart_Instructional-Grade-Level-Equivalence-Chart.pdf

Fountas, I. & Pinnell, G.S. (2016). About leveled lexts. *Fountas and Pinnell leveled book website*. Retrieved October 3, 2016 from http://www.fountasandpinnellleveledbooks.com/aboutleveledtexts.aspx

Fountas, I. & Pinnell, G.S. (2013). *Fountas and Pinnell leveled book list*. Retrieved from http://www.fountasandpinnellleveledbooks.com/

Hollander, C. (2009). *Amy's Airplane*. Houghon Mifflin Harcourt. Boston, MA.

Leonard, M. (1999). *Dress-Up*. Millbrook Press. Minneapolis, MN.

Pheasant, J. (2000). *Brushes*. Rigby Education. Barrington, IL.

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