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Professional Paper

Because Fluency in Reading Comprehension Is Critical for Academic Success:

Using SRI to consistently set goals and monitor progress in Reading Comprehension and to help English teachers develop effective curriculum and instructional practices

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This paper incorporates the findings of research and analyses conducted by MetaMetrics, Inc. presented separately as “Scholastic’s Lexile® Text Measurement and Analysis of India Instructional Materials”



Scholastic Reading Inventory as an instrument for effective Lexile® text measurement and analysis (India)

Scholastic Reading Inventory

The Scholastic Reading Inventory (SRI) is a research-based, computer-adaptive reading comprehension assessment, developed in partnership with MetaMetrics, Inc., creators of the Lexile Framework for Reading (A detailed explanation of the Lexile Framework is provided in Appendix A on page 8 of this document). SRI is the first assessment that can be administered individually or as a group and that directly reports student reading levels using the native Lexile item format. It is an objective assessment of a student's reading comprehension level that is designed on the principle of ability-based assessment. The results of SRI are reported on a developmental scale that is interpretable across levels, making it a useful tool for accurately establishing students' initial reading comprehension levels and monitoring their growth throughout the year. This is unlike traditional grade-level reading tests, which are merely designed to measure grade-level standards thus, resulting in scores that are not equal across all levels of ability. SRI provides precise, ongoing information about students' reading development and their progress towards meeting required standards.

History of the Lexile Framework

The Lexile Framework for Reading has a strong research pedigree, developed after 20 years of ongoing research. In 1984, the psychometric research team at MetaMetrics, Inc., received a grant from the National Institute of Child Health and Human Development to develop scientifically-based measures of student achievement that linked assessment with instruction, and to foster better educational practices that would match students with materials that would meet and challenge their abilities. The result was The Lexile Framework for Reading; a psychometric system for matching readers with texts of appropriate difficulty. Lexile measures are currently the most widely adopted reading measure. Tens of thousands of books and tens of millions of newspaper and magazine articles have Lexile measures. More than 150 publishers have Lexile measures for their materials.

In the United States, Lexile measures are used at the school-level in all 50 states. Each year, more than 28 million Lexile measures are reported from national and state assessments, classroom assessments and reading programmes, representing about half of U.S. students. As a result, Lexile measures tie day-to-day work in the classroom to critical high stakes tests. This provides interim assessment and feedback while using the same consistent measurement to easily track progress, all without additional testing.

National Reading Benchmarks for India

The Lexile Framework for Reading allows teachers, students, parents and community leaders to contextualize English expectations for students. The Indian education journey includes some benchmark exams that assess English language reading comprehension as well as other constructs. The English language reading comprehension passages from India's national exams, from ICSE and CBSE boards, were analysed to form the basic framework of an India Lexile Map with reference to the research foundations of MetaMetrics, Inc. (attached as Report A). The skills demonstrated in reading comprehension on a particular exam are dependent on the complexity and accessibility of the text. Texts typically increase in difficulty as students progress through the English language curriculum. To help determine the reading demands of India's English language courses, reading passages from the national exams from 2002 to 2012, prescribed textbooks and national level entrance examinations were examined using the Lexile Framework for Reading. The titles on the CBSE recommended Reading List were also analysed to arrive at the India Reading Benchmark.

The descriptive statistics for each exam is presented in the following tables. The mean passage Lexile measures are monotonically increasing, which indicates increasing difficulty of the texts through the curriculum progression.

Table 1: Lexile Measures of Selected Prescribed Texts for Class XII

Title	Words	Lexile
Flamingo - Deep Water	1945	700L
Flamingo - Going Places	2537	710L
Vistas - Evans Tries an O-Level	6162	740L
Vistas - The Enemy	7694	780L
Vistas - Tiger King	2603	810L
Vistas - Third Level	1677	890L
Vistas - Should Wizard Hit Mommy	2154	920L
Vistas - Memorial of Childhood	2119	930L
Flamingo - Last Lesson	1658	930L
Flamingo - Indigo	2782	960L
Flamingo - Lost Spring	2200	990L
Flamingo - Rattrap	3768	1050L
Flamingo - Interview Part I and II	1494	1130L
Flamingo - Poets and Pancakes	2826	1220L
Vistas - Journey to the End of the Earth	1268	1300L

Table 2: Lexile Measures of the CBSE Recommended Reading List for Middle and Secondary School

Title	Author	Words	Lexile
At Least a Fish	Anushka Ravishankar	13,608	700L
Ghosts Don't Eat	Anushka Ravishankar	16,024	720L
Birbal the Clever Courtier	Anupa Lal	17,471	730L
Mohenjodaro Mystery	Ilona Aronovsky	18,522	760L
The Mystery of the Silk Umbrella	Asha Nehemiah	23,179	770L
School Stories	Paro Anand	5,334	800L
Shakuntala	Adithi Rao	53,424	800L
Indian Folktales	Anupa Lal	19,530	830L
Children of the Enchanted Jungle	Tim Murari	21,124	840L
The Mystery of the Secret Hair Oil Formula	Asha Nehemiah	15,301	880L
The Wit of Tenali Raman	Devika Rangachari	38,983	900L
Gandhi—The Path to Greatness	Lushin Dubey	22,535	910L
Zig Zag and Other Stories	Asha Nehemiah	37,775	970L
The Time Machine	H.G. Wells	36,764	1070L
The Hound of the Baskervilles	Arthur Conan Doyle	41,694	1090L
Three Men in a Boat	Jerome K. Jerome	73,833	1090L
103 Journeys, Voyages, Trips and Stuff	Siddhartha Sarma	32,479	1120L
The Young Visitors or Mr Salteena's Plan	Daisy Ashford	15,030	1130L
The Story of My Life	Helen Keller	11,632	1150L
Rebecca of Sunnybrook Farm	Kate Douglas Wiggin	1,04,024	1160L
103 Historical Mysteries, Puzzles, Conundrums and Stuff	Siddhartha Sarma	59,059	1190L
Gulliver's Travels	Swift, Jonathan	37,601	1300L
The Canterville Ghost	Oscar Wilde	66,821	1430L

Table 3: Lexile Measures Class XII English Board Examinations

Year	Words	Lexile
2010 Section A - Reading - Set 1 Q1	871	1150L
2010 Section A - Reading - Set 1 Q2	541	1170L
2011Section A - Reading - Set 1 Q1	898	1080L
2011Section A - Reading - Set 1 Q2	478	830L
2011 Section A - Reading Set 1 Q1	811	1170L
2011 Section A - Reading Set 1 Q2	683	1080L
2012 Section A -Reading - Set 1 Q1	993	1570L
2012 Section A -Reading - Set 1 Q2	507	1110L
2012 Section A -Reading - Set 1 Q1	800	1180L
2012 Section A -Reading - Set 1 Q2	547	950L


Table 4: Lexile Measures for Selected All India Level Examinations

Year	Words	Lexile
Tests for AIEEE 2013 with Solved Papers 2002-2012	201210	1160L
CBSE All India Pre-Medical Solutions 2002-2012	196006	1140L

Popular titles for children in middle and high school

Lexile Measures for Commonly Used Literature

<u>J.R.R. Tolkien</u>		<u>Roald Dahl</u>	
The Hobbit	1000L	James & the Giant Peach	870L
Lord of the Rings#1: Fellowship of the Ring	860L	Matilda	840L
Lord of the Rings#2: Two Towers	810L	Charlie and the Chocolate Factory	810L
Lord of the Rings#3: Return of the King	920L	The Witches	740L
<u>J K Rowling</u>		Fantastic Mr. Fox	600L
Harry Potter & the Order of the Phoenix	950L	Magic Finger	450L
Harry Potter & the Goblet of Fire	880L	The Enormous Crocodile	410L
Harry Potter & the Half Blood Prince	1030L	<u>Judy Blume</u>	
Harry Potter & the Deathly Hallows	980L	Superfudge	600L
<u>R.K Narayan</u>		Fudge-a-Mania	490L
Malgudi Days	910L	Double Fudge	450L
Waiting for the Mahatma	810L	<u>Beverly Cleary</u>	
<u>Ruskin Bond</u>		Ramona Quimby	860L
Binya's Blue Umbrella	840L	Henry and Beezus	730L
Cherry Tree	590L	Mitch and Amy	950L
		Ganesha	690L
		Stories from Mythology	740L
		Birbal the Clever Courtier	730L
		Jake's Balloon Blast	600L


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Conclusions

Although the text measures are based on small samples, an overall pattern of increasing text demand is apparent for English reading instructional materials in India. For the assessment of text complexity measures (instructional Levels X and XII), the results indicate the level of text complexity of materials that a student should be able to access. These ranges do not indicate how a student is likely to perform on one of the assessments. The ranges are based only on the complexity of the passages on the assessments, not the skills asked in the assessment items and show the range at which a student should be reading at a particular level to be able to successfully comprehend the texts.

Creating the India Lexile Map

Using the initial data collected and benchmarking against U.S. grade levels, a preliminary India Lexile map was constructed. National benchmark exams were measured by MetaMetrics, Inc., comparisons were made with U.S. standards, and attention was given to constructing a reasonable progression to guide expectations of student growth. Four sets of English instructional materials were provided to MetaMetrics for analysis: popular textbooks series (Levels 1-8), *Essential English* (Levels 1-5), and *Scholastic Active English* (Levels 1-8). In addition, two sets of English course papers from the Central Board of Secondary Education (CBSE) (Levels X and XII) and six texts typically used as part of instruction in Level XII were provided. Each text was examined to determine its Lexile text measure. For the two sets of assessments for Levels X and XII, the reading passages, items, and directions from each form were measured to determine the text demand. In addition, Lexile scores for the questions used in the AIEEE and CBSE PMT examinations were used as a reference point in constructing the Lexile Map.

Table 5 shows the Lexile measures for the materials associated with each level of instruction.

Table 5: India text reading demand, by instructional level.

Instructional Level	N	Lexile Measure Mean (SD)	Minimum	Maximum
1	4	490.0L (40.8)	460L	550L
2	4	582.5L (47.9)	540L	650L
3	4	645.0L (26.5)	610L	670L
4	4	752.5L (29.9)	720L	790L
5	4	752.5L (33.0)	710L	790L
6	2	830.0L (0)	830L	830L
7	2	865.0L (49.5)	830L	900L
8	2	930.0L (56.6)	890L	970L
X	3	930.0L (170.6)	790L	1120L
XII	5	986.0L (87.9)	880L	1110L

By synthesizing these measures, a range of Lexile measures was determined appropriate to students of classes I to XII. Class XII texts and All India entrance examinations were extrapolated to create a continuum of performance from class I through class XII. Similarly, reading comprehension sections from CBSE board exams (2010 to 2012) were also measured.

Table 6 presents suggested ranges of reading demands for specific grade levels for use on the SRI (India) Lexile map.

Table 6. SRI (India) Lexile map ranges.

Instructional Level	Map Lexile Range
I	400L to 550L
II	500L to 650L
III	600L to 720L
IV	650L to 800L
V	700L to 840L
VI	770L to 880L
VII	820L to 950L
VIII	850L to 1000L
IX	890L to 1050L*
X	900L to 1130L
XI	910L to 1170L*
XII	930L to 1200L

* Ranges have been interpolated from the Level VIII, X, and XII ranges and may or may not be used on the SRI (India) Lexile map.

The India Lexile Map illustrates typical English language text demands for India school levels in conjunction with information on reader performance based on the text demands of India national boards and benchmark examinations. The India school level features reading comprehension levels, expressed as Lexile measures, needed to be successful in India English language courses. This alignment was constructed with a multi-faceted approach. The English language syllabus is anchored in the text demand levels of the CBSE recommended reading list. Text selections in this programme range from BR (Beginning Reader) to 1430L.

Using the information related to the reading demands of materials that students will be expected to interact with, performance standards have been developed for use with SRI in India (see Table 7). This information can be used to describe what students must do to likely demonstrate proficiency with respect to the specific content. The SRI policy descriptions for each of the performance standard proficiency band used at each grade level are as follows:

- *Advanced*: Students scoring in this range exhibit superior performance when reading grade-level appropriate text and can be considered as reading “above Grade Level.”
- *Proficient*: Students scoring in this range exhibit competent performance when reading grade-level appropriate text and can be considered as reading “on Grade Level.” Students performing at this level should be able to identify details, draw conclusions, and make comparisons and generalizations when reading materials developmentally appropriate for the grade level.
- *Basic*: Students scoring in this range exhibit minimally competent performance when reading grade-level appropriate text and can be considered as reading “below Grade Level.”
- *Below Basic*: Students scoring in this range do not exhibit minimally competent performance when reading grade-level appropriate text and can be considered as reading “significantly below Grade Level.”

Table 7. SRI (India) performance standards.

Instructional Level	Below Basic	Basic	Proficient	Advanced
I	199L and Below	200L to 459L	460L to 550L	551L and Above
II	299L and Below	300L to 539L	540L to 650L	651L and Above
III	399L and Below	400L to 609L	610L to 700L	701L and Above
IV	449L and Below	450L to 669L	670L to 770L	771L and Above
V	499L and Below	500L to 709L	710L to 800L	801L and Above
VI	549L and Below	550L to 769L	770L to 850L	851L and Above
VII	599L and Below	600L to 829L	830L to 900L	901L and Above
VIII	649L and Below	650L to 849L	850L to 970L	971L and Above
IX	669L and Below	670L to 889L	890L to 1020L	1021L and Above
X	699L and Below	700L to 899L	900L to 1070L	1071L and Above
XI	729L and Below	730L to 909L	910L to 1100L	1101L and Above
XII	749L and Below	750L to 929L	930L to 1130L	1131L and Above

This research about text difficulty can place these examinations in the context of English language learning in the United States (Williamson, 2008). This study indicates that post-secondary college and career pursuits involve texts that measure in the range of 1200L to 1400L. Reading passages from the CBSE Level XII examinations indicate that students in India are expected to read English language passages of slightly less difficulty.

Scholastic Reading Inventory as an Assessment Tool

A Lexile reader measure is typically obtained by administering a test of reading comprehension to a reader. When a test has been linked with the Lexile Framework for Reading through a field study, a Lexile measure for the reader can be reported. SRI is a standardized assessment designed to measure how well students read literature and non-fiction texts of varying difficulties. The reader's score on the test is reported as a Lexile measure from a low of 0L to a high of 2000L. However, when a reader scores at or below 0L, a BR code is displayed on the reader's report.

The 1999 SRI standard setting process included a study of the correlation between student SRI scores at various grades and Lexile measures. The standard setting process involved curriculum specialists, test development consultants, and other educators examining text and reader-based standards. According to the Scholastic Reading Inventory Technical Guide (2007), "Proficient was defined as performance that exhibited competent academic performance when students read grade-level appropriate text and could be considered as reading 'On Grade Level.' Students performing at this level should be able to identify details, draw conclusions, and make comparisons and generalizations when reading materials developmentally appropriate for their nominal grade level."

Each item consists of a passage that is response-illustrated.

Example of an SRI Reading assessment question

"The First Men in the Moon," by H. G. Wells

In addition to my belief in my powers as a business man, I had always in those days had an idea that I was equal to writing a very good play. It is not, I believe, a very uncommon persuasion. I knew there is nothing a man can do outside legitimate business transactions that has such opulent possibilities, and very probably that biased my opinion. I had, indeed, got into the habit of regarding this unwritten drama as a convenient little reserve put by for a rainy day. That rainy day had come. **I wanted to be a(n) _____.**

A. author B. doctor C. actor D. singer

A student takes a test of about 50 of these items. Using a psychometric model called the Rasch model, a correspondence table of the number of items the student got correct, or raw score, is generated for each test. This score can then be converted into Lexiles. The Rasch model is a conjoint measurement model, which means two elements can be measured on the same scale, in the same units. In the case of the Lexile Framework, these elements are text difficulty and reader ability. The reported Lexile measure is an estimate of the student's true reading ability. Variability in measures can occur over time from various factors, such as the student's

health and well being, or the conditions in which the test is taken. The typical amount of variability, or what psychometricians call “error”, is about 70L for any given test administration. Multiple measures will reduce this error, and are encouraged for more precise measurement.

If none of the formal test methods is available, it is possible to get a very good estimate of a reader’s Lexile measure by having him or her read a passage from a book that has been assigned a Lexile measure. By paying careful attention to how well the reader negotiates the text, a determination of whether the book is too easy, too hard or appropriate for the reader can be made.

By providing a common metric that can be applied to both text difficulty and reading ability—a common metric that has more precision and less potential stigma than grade-equivalent leveling—Scholastic Reading Inventory offers educators a flexible and easy-to-use tool to help target students with texts that present the appropriate degree of reading challenge. In addition, the accuracy and flexibility of Scholastic Reading Inventory makes it an excellent way to communicate reading goals and achievements with students, families and other educators.

Applications of the SRI Test and Reports

The ability to develop an effective instructional programme for learning English and to select reading resources that match appropriately to the students’ reading fluency levels has taken on greater significance in an environment where reading comprehension fluency is positively correlated to academic achievement. Students need to be able to read across subject areas and effectively apply comprehension skills that they have learnt in the language classroom. It is within this context that the Scholastic Reading Inventory and the Lexile Framework™ for Reading provide educators an opportunity to gain appropriate information and design relevant reading and English language instructional programmes to meet the needs and abilities of their students.

One of the most useful deliverables of SRI is that critical student assessment data is captured, analyzed and presented in reports that allow educators to track reading comprehension progress of individual students, groups, classes and at whole-school level for specified time periods. This enables educators to critically review and analyse instructional practices and fine-tune them to meet the needs of specific students and groups of students. It allows them to engage more effectively in differentiated instruction and assessment as they develop instructional programmes and materials.

When used as an assessment tool, SRI provides specific data based on individual abilities. Current standardized reading comprehension tests draw from standardized tests and grade level reading texts to measure fluency. These types of tests deliver the same test items to every student regardless of a student’s current reading ability. These types of tests cannot provide

accurate indicators of reading comprehension levels, as all students are not starting at the same level. Hence, the accuracy of the scores and its use as a tool to guide instruction do not take into account the existence of differentiated abilities in the classroom. When Lexile® measures are used to compare students' reading abilities to reading material, it allows for adjustment of the readers' expected comprehension level and leads to successful individualized reading experiences through targeted instruction and intervention programmes.

Adopting SRI as a core assessment tool will enable educators to take into account the differences in ability that affect the accuracy of a student's score. It will provide a much more accurate indicator of students' reading proficiency as it uses a common, absolute scale to measure text readability and student reading ability. For teachers and educators it provides the opportunity to track students' progress and assign appropriate reading materials using a systematic, structured and standardized approach.

The reports on the SRI test enable teachers to understand the reading level and needs of each student and at the same time, understand the reading profile of the class as a whole. The teacher will be able to make informed decisions with regard to classroom instructional strategies and materials, classroom management and intensive and extensive reading requirements. The data will influence the choice of texts and instructional materials as well as the reading and language learning instructional approach. Across the level, the level head and teachers of the level will be able to see the spread of students and determine differentiation and collaborative strategies particularly with regard to intervention/remediation and enrichment. Decisions can be made about the allocation of teachers to particular classes based on the reading profile and needs as well as the division of students into various classes. At a whole-school level then, a profile of the reading proficiency is created and the Head of Department, together with the faculty, is able to make better-informed decisions about instructional programmes, reading programmes and library materials.

When the SRI assessment is administered consistently and at fixed intervals, reports generated will indicate the reading progress of a student within that grade level and across grades as they progress through primary/secondary school. Consistent and skillful application of the results of SRI assessments will assist the teacher in providing high-quality instruction and targeted interventions that match students' needs by providing systematic, data-driven processes for determining if implemented strategies are working for each student. SRI can support school-, cluster- and nation-wide reading proficiency initiatives by serving as a universal screener, placement tool, and progress monitor for all students at class-, school-, cluster- and nation-wide levels. Using the reports, teachers can determine whether intensive individual intervention, targeted small group instruction or a core instructional programme, or a mix of all three would be most effective for each student.

The results of SRI are reported on a developmental scale that is interpretable across grade levels, making it a useful tool for accurately establishing students' initial reading comprehension levels and monitoring their growth throughout the year. Teachers can use the SRI to individualize students' learning experiences and help ensure that they become motivated and successful readers.

While teachers typically have a good understanding of what students are expected to know and be able to do so in order to demonstrate basic grade-level reading proficiency, they may not always have timely or accurate information to help individual students develop their reading skills. Moreover, because teachers may differ in their approach to reading instruction— both basic reading instruction and remedial interventions—they are often in need of a measure that provides precise, useful information about reading ability that is aligned with end-of-year measures and is more or less neutral with respect to their chosen approach to reading instruction.

Conclusion

The SRI assessment tool can be used to identify students in need of assistance, effectively guiding instructional interventions early in the school year. With access to an effective classroom assessment tool that produces a metric that describes both the complexity of text and student reading comprehension level, and that is related to expressed achievement levels, teachers can:

1. Align instructional materials to state standards and scaffold student comprehension instruction.
2. Establish realistic, informed student achievement growth goals based on students' initial reading comprehension levels.
3. Monitor an instructional plan to help students at all levels demonstrate proficiency in meeting reading standards.

In other words, teachers using the SRI will be able to obtain the data they need throughout the year to monitor student progress, set goals according to reading level, and adjust instruction appropriately. Teachers can start thinking about reading proficiency in an objective manner, set goals and monitor performance, craft initiatives suited to their students' reading proficiency profiles and evaluate their effectiveness. Most importantly, implementing the SRI will support every school's goal of ensuring that all students achieve reading success which will ultimately lead to greater confidence and academic achievement.

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APPENDIX A

What is the Lexile Framework for Reading?

The Lexile Framework for Reading is a scientific approach to reading and text measurement. It places readers and text on the same scale and allows reading comprehension proficiency to be measured consistently on the same scale across time. The Lexile Framework for Reading systematizes two common intuitions: that text can be ordered according to the difficulty each presents for a reader and that readers can be assessed according to the success each will have with any particular text.

With the Lexile Framework for Reading, both the reader and the text can be placed on the same measurement scale, using the same unit. A Lexile measure is the numeric representation of an individual's reading ability or a text's readability (or difficulty), followed by an "L" (for Lexile). The Lexile scale is a developmental scale for reading that ranges from below 0L for emerging readers and beginning texts to above 1700L for advanced readers and texts. Values at or below 0L are reported as Beginning Reader (BR).

There are two Lexile measures: the **Lexile reader measure** and the **Lexile text measure**. A Lexile reader measure represents a person's reading ability on the Lexile scale. A Lexile text measure represents a text's difficulty level on the Lexile scale. When used together, they can help a reader choose a book or other reading material that is at an appropriate

difficulty level. A very useful feature of Lexile reader and text measures is that they can be used together to predict how well a reader will likely comprehend a text at a specific Lexile level. For example, if a reader has a Lexile measure of 1000L, he or she will be forecasted to comprehend approximately 75 per cent of a book with the same Lexile measure (1000L). The 75-per cent comprehension rate is called “targeted” reading.

The Lexile measure can also be used to monitor a reader’s growth in reading ability over time. When an assessment is linked to the Lexile Framework for Reading, students’ test scores immediately become actionable. Lexiles are a powerful tool for linking assessment with instruction across the curriculum, by taking the guesswork out of selecting materials that can help to improve students’ reading ability.

Lexile measures are based on two factors: word frequency and sentence length, which are more formally called semantic difficulty and syntactic complexity. Both of these factors, over decades of research, have been shown to be excellent predictors of how difficult a text is to comprehend. The relationship of these two factors within a text contributes to a single Lexile measure for that text. Early reading researchers determined that the difficulty of words is a continuum based on exposure, with frequently encountered words being the easiest and rare words the most difficult. Researchers at MetaMetrics, Inc. analyzed more than 50 semantic variables to determine which were the most valid indicators of text difficulty. The mean log word frequency, which is the logarithm of the number of times a word appears in each 5 million words of a corpus of nearly 600 million words, had the highest correlation with text difficulty ($r = -0.779$). This is the measurement used to determine the semantic difficulty of text in the Lexile system. It should be noted that word frequency is not the number of times a word appears in a specific passage, but the frequency of the word in the corpus of nearly 600 million words that is employed by the Lexile Analyzer. Reading researchers have found that the best predictor of the difficulty of a sentence is its length. Long sentences are likely to contain more clauses, and ‘therefore’ communicate not only more information and ideas, but also an interrelationship between them. Researchers also speculate that longer sentences require the reader to retain more information in short-term memory. Sentence length is a powerful indicator of the syntactic complexity of a passage.

The Lexile Framework for Reading works by combining into an algebraic equation the measurements of word frequency and sentence length for any passage. This equation is called the Lexile Equation, and reflects both the semantic and syntactic difficulty of that passage. This equation can also be used to place reading comprehension test items on the same measurement scale, so that texts and reading test scores can be reported in Lexiles as well. A Lexile text measure is obtained through analyzing the readability of a piece of text.

The Lexile Analyzer, a software programme specially designed to evaluate the reading demand of text, analyzes the text’s semantic and syntactic characteristics and assigns it a

Lexile measure. The Lexile Analyzer measures text by breaking down the entire piece and studying its characteristics, such as sentence length and word frequency, which represent the syntactic and semantic challenges that a text presents to a reader. The outcome is the reading difficulty, expressed as a Lexile, along with information on the word count, mean sentence length (MSL) and mean log frequency (MLF).

Example of the output generated by the Lexile Analyzer

Title	Author	Lexile Level	Word Count	MSL	MLF
Harry Potter and the Sorcerer's Stone	Rowling, J.K.	880	76896	11.94	3.25185

Longer sentence lengths and words of lower frequency lead to higher Lexile measures; shorter sentence lengths and words of higher frequency lead to lower Lexile measures.

During the calibration process, the Lexile Analyzer extracts *slices* from the text. A slice is a piece of text containing a minimum of 125 words. If the 125th word falls within a sentence, the Lexile Analyzer continues adding words until it finds the sentence-ending punctuation (i.e., period, question mark, exclamation mark or semicolon). A slice is used when analyzing books, periodicals, textbooks and other large bodies of text. Consider a piece of text that is 250 words long. The first 125 words consist of five long sentences of 25 words each. The second 125 words consist of 25 short sentences of five words each. If this text were analyzed as a whole, the first 125 words would have an impact of five times the second 125 words in estimating the mean sentence length for the text. Analyzed separately, the first set of 125 words is recognized for its long sentence length, and generates a high Lexile measure. The second set of 125 words is recognized for its short sentences, and receives a low Lexile measure. When these two slices are averaged, their Lexile calibration is much higher than if the full 250 words were analyzed together. Thus, breaking the text into slices allows for the most accurate Lexile measure of a complete body of text.

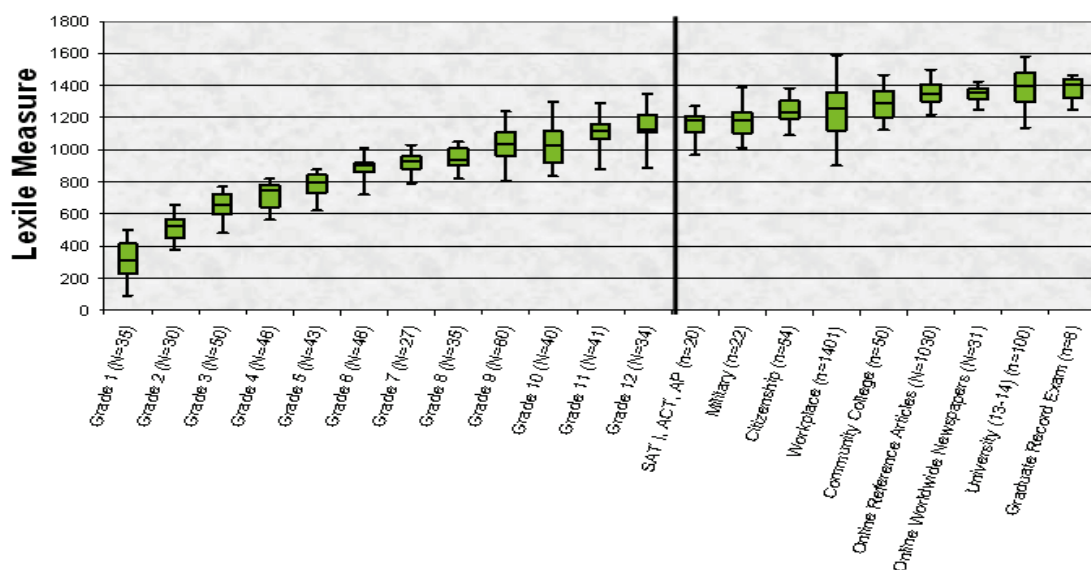
Applications of the Lexile Framework for Reading

Lexile measures are uniquely independent, accurate and actionable. They can be applied to all types of texts, regardless of the purpose. In the first sample below, a range of international newspapers have been measured to indicate the reading challenge they pose to readers. The selection was one week of all published materials in the newspaper.

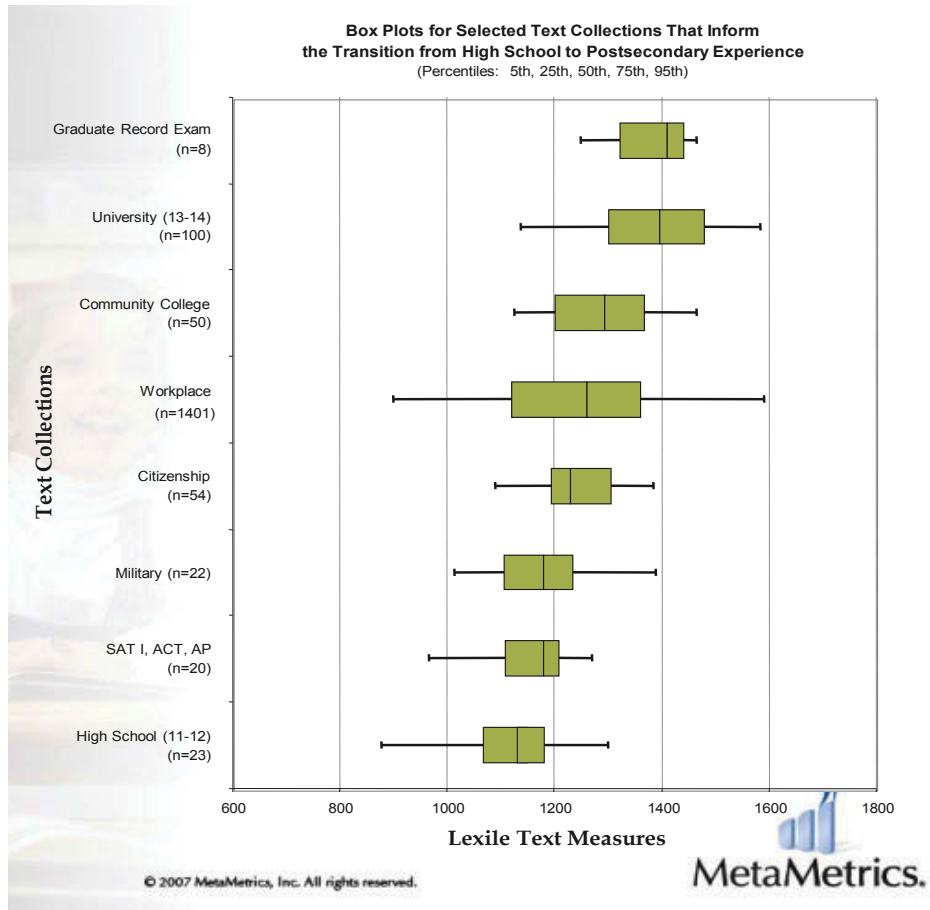
International Newspapers	Lexile Score
The Egyptian Gazette (Egypt)	1440L
Oman Daily Observer (Oman)	1430L
Financial Times (Great Britain)	1430L
The Straits Times (Singapore)	1410L
Gulf Times (Qatar)	1420L
China Daily (China)	1400L
France Daily (France)	1400L
The Moscow Times (Russia)	1400L
The Australian (Australia)	1390L
German Times (Germany)	1390L
Copenhagen Post (Denmark)	1390L
Irish Times (Ireland)	1380L
Santiago Times (Chile)	1380L
Jerusalem Post (Israel)	1370L
The Times of India	1320L
New Zealand Herald (New Zealand)	1290L

A study was done of all the standard texts that American school students will encounter from Grade 1 to Grade 12. The average Lexile measures were plotted below and indicate a continuum of increasing difficulty in the reading resources, with the largest increase in difficulty evidenced in the lower grade levels.

Text Difficulty Continuum
(Percentiles: 5th, 25th, 50th, 75th, 95th)



A selection of common texts that most people will be required to read in the course of their education, at the workplace and in daily life were measured to indicate the level of reading fluency required to function effectively in a community. The results indicate that at a minimum, a high school level of reading fluency is required to achieve success in the workplace or complete regular citizenship tasks.





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