



# **How prepared are subgroups of Texas students for college-level reading: applying a Lexile®-based approach**

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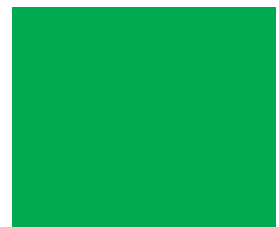
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This brief responds to a REL Southwest Governing Board request to build on the report *How prepared are students for college-level reading? Applying a Lexile®-based approach* by disaggregating the results by student subgroup.

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This REL Technical Brief is available on the regional educational laboratory website at <http://ies.ed.gov/ncee/edlabs>.

## Summary

Many students graduate from high school unprepared for the rigorous reading required in entry-level college and career work. This brief builds on a recent report (Wilkins et al. 2010) that used the Lexile measure (a method for measuring the reading difficulty of prose text and the reading capability of individuals) to estimate the proportion of Texas grade 11 public school students in 2009 ready for entry-level college reading in English. The previous study examined the overall grade 11 Texas student population; this brief uses the same methodology to present similar readiness estimates for student subgroups as defined by 10 characteristics that Texas uses for its state accountability system. An Excel<sup>®</sup> tool was created to enable school administrators to more easily compare the preparation of grade 11 students to read entry-level English textbooks from University of Texas (UT) system schools with that of students overall or selected subgroups of students statewide.

Using a linguistic theory–based method for measuring reading difficulty (the Lexile<sup>®</sup> Framework for Reading), this study assessed reading readiness for subgroups of grade 11 students who took the annual Texas state assessment.<sup>1</sup> It describes the percentage of students who were prepared to read and comprehend entry-level college English textbooks.

The study addressed the following questions:

- How prepared are grade 11 Texas students to read and comprehend textbooks used in entry-level college English courses in the UT system as measured by the Lexile<sup>®</sup> Framework for Reading?
- How does preparedness vary by student subgroup?

Results are provided for subgroups defined by 10 characteristics. These subgroups are the reporting categories in the Academic Excellence Indicator System, the system that Texas uses to evaluate its K–12 schools and districts for state and federal accountability reporting:

- Gender.
- Race/ethnicity.
- Economically disadvantaged status.
- At-risk status.<sup>2</sup>
- Limited English proficiency status.
- English as a second language status.
- Gifted and talented education status.
- Career and technical education status.<sup>3</sup>
- Special education status.
- Version of the grade 11 TAKS or TAKS–Accommodated.<sup>4</sup>

Across subgroups, gifted and talented (GT) students were the most prepared for college-level reading, followed by Asian and White students. Within specific sets of subgroup comparisons, results for very well prepared (able to read 95–100 percent of entry-level college English textbooks) students showed that:

- Female students (55 percent) were more prepared than male students (46 percent).

- Asian (69 percent), White (64 percent), and American Indian (56 percent) students were more prepared than Hispanic (40 percent) and Black (37 percent) students.
- Economically disadvantaged (37 percent) students were less prepared than those who were not economically disadvantaged (62 percent).
- At-risk (28 percent) students were less prepared than those who were not at-risk (74 percent).
- Limited English proficient (LEP) students (5 percent) were less prepared than those who were not LEP (54 percent).
- English as a second language (ESL) students (4 percent) were less prepared than those who were not ESL (53 percent).
- Students receiving GT services (88 percent) were more prepared than students not receiving GT services (47 percent).
- Students taking at least one career and technical education course (49 percent) were slightly less prepared than those not taking such a course (56 percent).
- Students receiving special education services (9 percent) were less prepared than those who were not receiving such services (54 percent).

This report includes a link to an online Excel<sup>®</sup> tool that can be downloaded to compare the college reading readiness levels of local students with the statewide normative results overall and for each subgroup. The tool can be used to compare the reading preparedness of any of the subgroups examined in this study. The main report provides examples illustrating how a district can use these comparisons.

# Technical brief

## Why this brief?

Preparing high school students for postsecondary success is important for our country's economic future (Baum, Ma, and Payea 2010; Carnevale, Rose, and Cheah 2011; Levin et al. 2007). Nearly half of all new jobs created between 2008 and 2018 are expected to require a postsecondary degree (Bureau of Labor Statistics 2009). As a result, recent national and state legislative initiatives focus on improving postsecondary success (American Recovery and Reinvestment Act 2009; Texas Legislature 2009). Texas policy calls for preparing all students for college or career readiness (Texas Higher Education Coordinating Board 2008). Still, many students graduate from high school unprepared for entry-level college work (Strong American Schools 2008; Terry 2007) or enter the workforce unprepared to read and comprehend job-related documents (Williamson 2004).

For students who enroll in postsecondary education, being well prepared to read college-level texts is vital. Research has found an association between reading comprehension skills, as measured by ACT reading scores, and college matriculation and first-year college success, as measured by course grades (ACT, Inc. 2006).

It has been challenging for K–12 educators to find an easily accessible and inexpensive indicator of their students' preparation for the reading levels required by their local postsecondary institutions or the institutions their graduates most commonly attend. Without such an indicator, administrators cannot track closely whether key subgroups of their students are well prepared for the college-level reading demands that they are likely to encounter and whether there are achievement gaps between subgroups.<sup>5</sup>

This study responds to administrators' need for an indicator that can be used to track the preparation of key subgroups of students

for reading entry-level college texts. It uses a methodology that links the difficulty of entry-level college textbooks in the University of Texas (UT) system with the reading ability of high school students. This methodology, reported in a study by Wilkins et al. (2010), used the Lexile® Framework for Reading<sup>6</sup> to compare the reading difficulty of college-level textbooks with the reading comprehension levels of grade 11 students, as calculated from the state assessment<sup>7</sup> administered to all grade 11 students. Wilkins et al. found that approximately half (51 percent) of grade 11 Texas public high school students were prepared to read most of the fall 2010 entry-level college English textbooks used in the UT system.

The current study uses the Wilkins et al. (2010) methodology to examine the preparedness of subgroups of grade 11 Texas public high school students to read entry-level college English textbooks at the UT system. The study uses subgroups as defined by the Texas Education Agency (see box 1 for definitions of subgroups). The UT system was selected because 30 percent of students attending a Texas public four-year institution in fall 2008 (Texas Higher Education Coordinating Board 2009) were enrolled in this system, a higher level of enrollment than any other system in the state. The nine campuses in the UT system range in size, location, SAT and ACT scores for first-year students, and racial/ethnic composition (see appendix E for additional information).

This report also includes a link to an online Excel® tool that can be used by local education agencies or school administrators to compare the performance of their students with the performance of students or selected subgroups of students statewide. This could help educators distinguish specific groups of students whose performance is below acceptable levels and for whom interventions might be identified.

## BOX 1

**Definitions of subgroups**

This brief provides results for the following student subgroups. Full definitions for each subgroup are provided in appendix C.

*Gender.* Each student is identified as male or female.

*Race/ethnicity.* Each student is identified as belonging to one of the following five groups: American Indian, Asian, Black, Hispanic, or White. Black includes African American, Hispanic includes Latino, Asian includes Native Hawaiian or Other Pacific Islander, and American Indian includes Alaska Native.

*Economically disadvantaged status.* Students who are enrolled in the free or reduced-price lunch program or receiving another form of public assistance are identified as economically disadvantaged.

*At-risk status.* Students are identified as at-risk under the Texas Education Agency Academic Excellence Indicator System if one or more criteria are met, including repeating a grade, failing to maintain an average above

70 in two or more subjects, homelessness, pregnancy or parenting, and being limited English proficient (see appendix C for a full list).

*Limited English proficiency status.* Each student is identified as limited English proficient or not limited English proficient by a language proficiency assessment committee, based on a home language survey.<sup>1</sup>

*English as a second language status.* Each student is identified as being enrolled or not enrolled in a state-approved English as a second language program.

*Gifted and talented education status.* Students are identified as receiving gifted and talented education services or not.

*Career and technical education status.* Students are identified as career and technical education students if they are enrolled in one or more state-approved career and technical education courses.

*Special education status.* Students are identified as being in a special education program if they use special education support services, supplementary aids, or other special arrangements.

*Version of the grade 11 Texas Assessment of Knowledge and Skills (TAKS) or TAKS–Accommodated.* The Texas Education Agency considers these two versions of the test to be equivalent.<sup>2</sup> All students who complete the TAKS–Accommodated receive special education services, though not all students receiving special education services take the TAKS–Accommodated.

**Notes**

1. The Texas Education Agency requires local education agencies to compare the TAKS passing rates of former limited English proficient students one year after exiting for each subject area with the state-wide passing percentage for all students tested (Texas Education Agency 2008b).
2. There are four versions of the TAKS. The TAKS–Accommodated provides accommodations for students—such as large print for visually impaired students—but the scores are considered equivalent to scores of the regular TAKS. For this reason, results from TAKS and TAKS–Accommodated are combined for state and federal accountability reporting (Texas Education Agency 2008a). TAKS–Modified and TAKS–Alternate have test modifications that do not yield equivalent scores or Lexile measures; they are not included in this study. In 2009, there were 302,959 grade 11 public school students in Texas (Texas Education Agency 2009a); 265,895 took either the TAKS or TAKS–Accommodated (Texas Education Agency 2009b).

Preparation levels are examined separately for different subgroups of students, as defined by the Texas Education Agency. The study addresses the following questions for Texas public school students who took the April 2009 exit-level Texas Assessment of Knowledge and Skills (TAKS) assessment:

- How prepared are grade 11 Texas students to read and comprehend textbooks

used in entry-level college English courses in the UT system as measured by the Lexile® Framework for Reading?

- How does preparedness vary by student subgroup?

The subgroups were selected because they are the reporting categories in the Academic Excellence Indicator System, the Texas system used to evaluate K–12 schools and districts

for state and federal accountability reporting. The results for all Texas students, as reported in Wilkins et al. (2010), are included, when relevant, for selected student subgroups. So that the subgroup results can be compared with the Wilkins et al. (2010) results, this study used data from the same TAKS administration (April 2009) and the same UT textbooks.

### Study methodology

The Wilkins et al. (2010) study used the Lexile® Framework for Reading to measure the reading difficulty of textbooks and the level of reading comprehension of students. In particular, the framework was used to link grade 11 students' reading scores from the TAKS to the reading difficulty of textbooks used in entry-level English courses at the nine campuses of the UT system.<sup>8</sup> Because all students are required to take the TAKS, an estimate of readiness for entry-level college English courses can be developed for nearly all Texas students (excluding a small number who require special testing modifications or who were absent during testing).

#### The Lexile® Framework for Reading

The Lexile® Framework for Reading is a linguistic theory-based method for measuring both the reading difficulty of prose text and the reading capability of individuals (White and Clement 2001). To obtain a book's measure of reading difficulty, text passages are analyzed on the basis of the average length of sentences and the average difficulty of words in a passage.<sup>9</sup> A number (Lexile) is assigned to the book that indicates its level of reading difficulty. The Lexile (L) scale ranges from 0L for beginning texts to 1700L for advanced texts.

The ability of a student to read books can also be placed on the Lexile scale. Student Lexiles can be obtained using reading comprehension assessments that have been linked to the Lexile scale. The student Lexile measure is based on the level of text (measured in Lexiles)

that a student can read with approximately 75 percent comprehension. This is considered the level at which students can successfully read and understand the text using contextual clues for words that they do not know and comprehension strategies to understand the meaning of the text they are able to read (Lennon and Burdick 2004). Using the Lexile measures for a reader and the Lexile measure for a book (or passage of text), one can determine how likely the reader will be able to comprehend the text (MetaMetrics, Inc. 2008).

To understand the meaning of different Lexile values, it is helpful to look at examples. Lexile measures for selected books are shown in table 1, and the Lexile measures for sample passages are shown in table 2. More details on the Lexile® Framework and a more complete version of table 2 are in appendix A.

This study used the methodology developed and applied in Wilkins et al. (2010) that determined the Lexiles for a set of college textbooks and linked them to the Lexile measures for grade 11 students to determine the percentage of students who were prepared to read a given percentage of the textbooks. The steps involved in this methodology are described in the following section.

#### Determining the Lexile distribution of entry-level college English textbooks

Entry-level English courses<sup>10</sup> in the UT system were selected as the source of textbooks, because these courses are required for all college students enrolled in the UT system, regardless of major. The textbooks used in this study were restricted to the textbooks used in fall 2009 entry-level English courses in the UT system.

Within these courses, 83 distinct textbooks were identified and sent to MetaMetrics, Inc. (the developer of the Lexile scale) to calculate their Lexile values. A value could not be assigned to nine of the textbooks because they had less than 50 percent prose content<sup>11</sup> (a requirement of the Lexile scale). The remaining

TABLE 1  
Samples of Lexile measures for selected books

Lexile measure	Book
720	<i>Twilight</i> , Stephenie Meyer (Little, Brown and Co. 2005)
1010	<i>A walk to remember</i> , Nicholas Sparks (Warner 1999)
1020	<i>Hatchet</i> , Gary Paulsen (Simon and Schuster 2007)
1030	<i>Harry Potter and the half-blood prince</i> , J.K. Rowling (Arthur A. Levine 2005)
1050	<i>Uncle Tom's cabin</i> , Harriet Beecher Stowe (Modern 1996)
1140	<i>Catch-22</i> , Joseph Heller (Simon and Schuster 2004)
1150	<i>Madame Bovary</i> , Gustave Flaubert (Oxford 1998)
1180	<i>Sense and sensibility</i> , Jane Austen (Dover 1996)
1300	<i>Henry VIII</i> , William Shakespeare (Oxford 2000)

Note: Because different editions of a book can reflect editorial changes, slight differences in Lexile measures might exist between different publications of the same book. The measures indicated are for the editions indicated.

Source: MetaMetrics, Inc. n.d.

74 were assigned a Lexile measure (see appendix D for more information on the textbook sample).

The next step was to determine how likely it was that students would encounter these 74 textbooks, based on how frequently each book was used in the UT system. The goal was to provide an appropriate estimate of the probability a student would encounter a book of a certain difficulty (not a specific book). Because some textbooks were used in multiple institutions and courses (or both) and in sections with varying student enrollments, the textbooks were weighted by the number of students assigned each book. This approach introduces the idea of a *textbook-use*, defined as one student reading one textbook in one selected college course. The weight applied to a textbook equals its number of textbook-uses; textbooks used by more students were given an appropriately larger weight than books that were rarely used (books that students would have a very small probability of encountering). Lexile percentiles can be created using this weighted range of UT textbook Lexiles.

The distribution of the textbook Lexiles and the number of textbook-uses for each textbook are shown in figure 1. Specific Lexile percentiles (5th, 25th, 50th, 75th, and 95th) are also noted in the figure. The Lexile measures for these textbooks ranged from 670L to 1450L, with the middle 50 percent of textbook-uses ranging from 1100L to 1260L.<sup>12</sup> The wide variation in the number of textbook-uses at different Lexiles indicates that some books were used in a large numbers of course sections, and others were used in only a few.

Details about how these textbook calculations were done are in appendix F.

#### Calculating the percentage of students who can read at each textbook percentile level

The next step was to determine what percentage of students were able to read at the Lexile levels of these books. The population of students for this study was all grade 11 Texas public school students who took the April 2009 exit-level TAKS or TAKS–Accommodated (see table F1 in appendix F). All student data came from publicly available TAKS frequency distributions and the TAKS–Lexile conversion table produced in a 2005 study that linked TAKS scores to corresponding Lexile measures (Texas Education Agency 2005). The first step was to use these data to calculate the corresponding cumulative frequency distributions<sup>13</sup> of Lexile measures for students. This distribution was used to determine the percentage of students who could read at a specific Lexile difficulty level or higher.

For example, to determine the number of students who were able to read 75 percent of the textbooks, the Lexile level associated with the 75th percentile of textbook-uses was identified as 1260L. Next, the number of students with a Lexile of 1260 or higher was calculated. This was obtained using the student cumulative frequency distribution.

In the current study, the cumulative frequency distribution of Lexile measures for each



TABLE 2  
**Samples of text passages at various Lexile measures**

Lexile measure	Sample
670	<p>Refer to all the physical activities you and your classmates listed at the beginning of this chapter. Put these activities into the appropriate categories of sports, exercises, and martial arts in the chart below. Some activities may belong in more than one category. For example, swimming can be a sport or an exercise.</p> <p>Imagine that a friend has asked you to give suggestions for activities that children can do in order to get exercise. Work with two or three classmates. Make a list of 10 ways that children can get exercise that would be fun for them. When you are finished, write your suggestions on the blackboard. As a class, decide which 10 activities children will enjoy the most.</p> <p>Refer back to the second follow-up activity. Write a letter to your friend and describe your 10 recommendations.</p> <p>Write in your journal. Describe the most exciting sports event you have ever watched or participated in. What was the event? What happened? Why was it exciting for you? (Smith and Mare 2004a, p. 78)</p>
1140	<p>People who listen to speeches take a journey of sorts, and they want and need the speaker to acknowledge the journey's end. The more emotional the journey, as in speeches designed to touch hearts and minds, the greater the need for logical and emotional closure.</p> <p>One way to alert the audience that a speech is about to end is to use a transition statement or phrase. Phrases such as <i>Finally</i>, <i>Looking back</i>, <i>In conclusion</i>, and <i>Let me close by saying</i> all signal closure.</p> <p>You can also signal closure more subtly, by your manner of delivery. For example, you can vary your tone, pitch, rhythm, and rate of speech to indicate that the speech is winding down.</p> <p>Once you've signaled the end of your speech, do finish in short order (though not abruptly). (O'Hair and others 2007, p. 115)</p>
1450	<p>While there are indeed limits to what we will be able to produce from grain, cellulose ethanol production will augment, not replace, grain-based ethanol. The conversion of feedstocks like corn stover, corn fiber, and corn cobs will be the "bridge technology" that leads the industry to the conversion of other cellulosic feedstocks and energy crops such as wheat straw, switchgrass, and fast-growing trees. Even the garbage, or municipal solid waste, Americans throw away today will be a future source of ethanol.</p> <p>The ethanol industry today is on the cutting edge of technology, pursuing new processes, new energy sources, and new feedstocks that will make tomorrow's ethanol industry unrecognizable from today's. Ethanol companies are already utilizing cold starch fermentation, corn fractionation, and corn oil extraction. Companies are pursuing more sustainable energy sources, including biomass gasification and methane digesters. And, as stated, there is not an ethanol company represented by the RFA that does not have a cellulose-to-ethanol research program. (Easton 2009, pp. 209–10)</p>

Note: See table D2 in appendix D for full reference information for the books cited; text passages are taken from textbooks examined as part of this study. Additional text samples are provided in appendix A.

Source: Authors' compilation based on MetaMetrics, Inc.'s analysis of books.

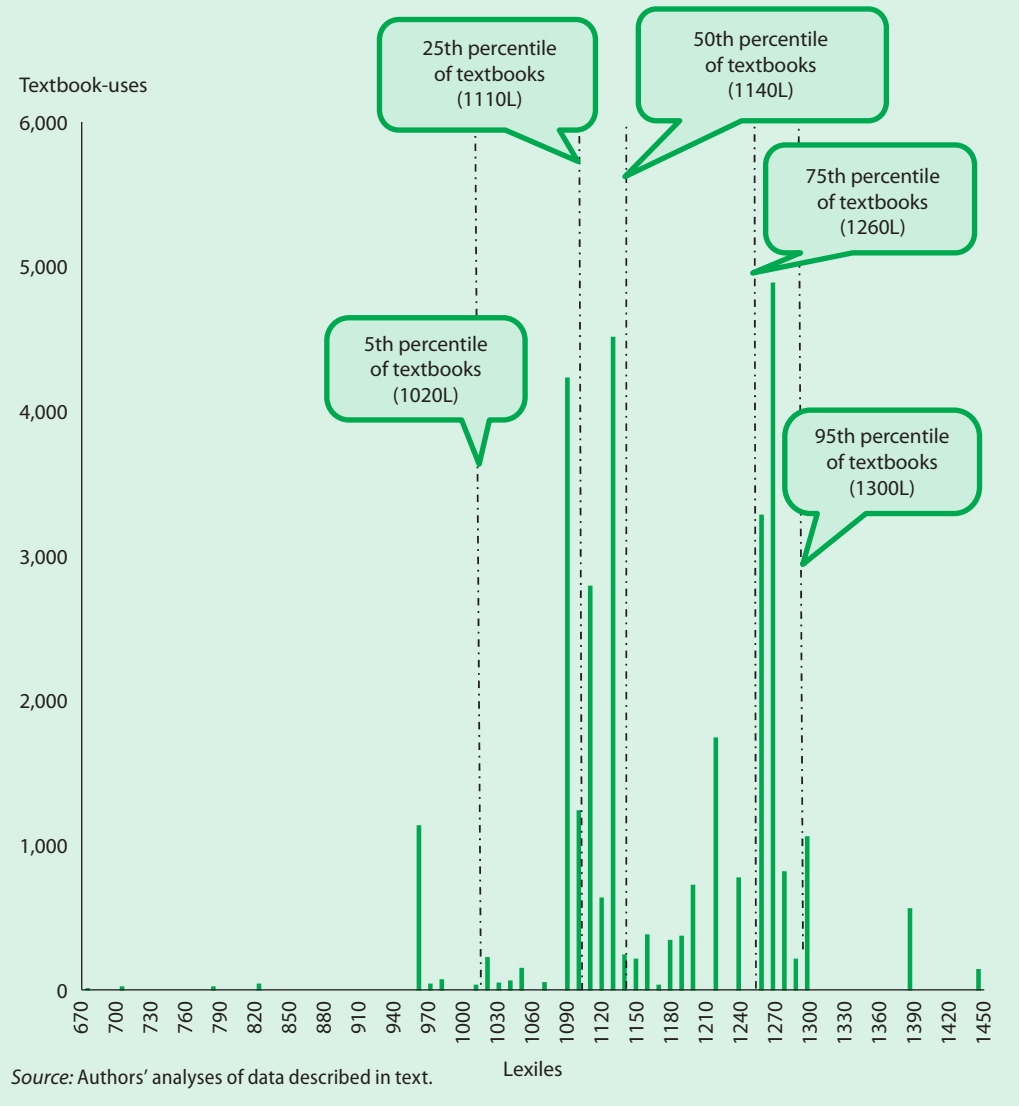
student subgroup was calculated, and then the percentage of students who could read textbooks at five textbook-use percentiles—5th, 25th, 50th, 75th, and 95th—was examined. The complete results of these analyses are presented in appendix G. For clarity of presentation,<sup>14</sup> the following discussion of the findings is focused on three levels of preparedness, corresponding to three of the five textbook-use percentiles:

- *Very well prepared.* Able to read and comprehend 95–100 percent of the entry-level college English textbooks.
- *Somewhat prepared.* Able to read and comprehend 50–94 percent of the entry-level college English textbooks.
- *Not prepared.* Able to read and comprehend less than 50 percent of the entry-level college English textbooks.

### Study findings

There were clear differences by subgroup in the percentage of grade 11 students who were able to read entry-level college English textbooks. The findings demonstrate variability within

FIGURE 1  
**Distribution of textbook Lexiles and number of textbook-uses for each textbook Lexile**



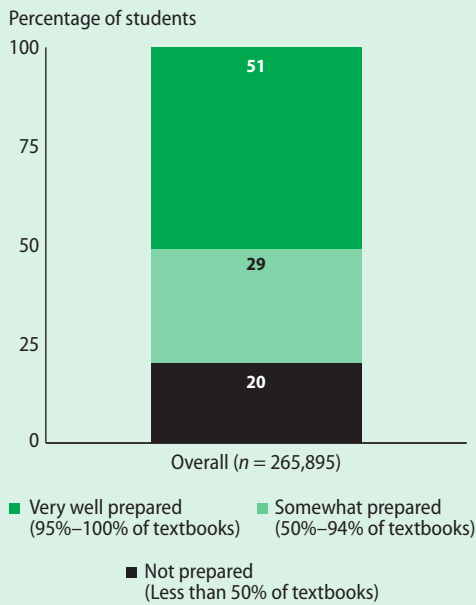
types of subgroups such as race/ethnicity, gender, and at-risk status. What follows is a description of the findings for all students and by subgroup. Figures are included to illustrate, at a glance, how the subgroups differed in preparedness to read different percentages of entry-level college English textbooks.

#### Results for all grade 11 students

The results for all grade 11 students, as found by Wilkins et al. (2010), are as follows (figure 2):

- *Very well prepared* (95–100 percent of textbooks). About half the students (51 percent) could read nearly all the college textbooks.
- *Somewhat prepared* (50–94 percent of textbooks). Almost 3 in 10 students (29 percent) were somewhat prepared to read college textbooks.
- *Not prepared* (less than 50 percent of textbooks). One in five students (20 percent) was not prepared to read college textbooks.

**FIGURE 2**  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, overall, 2008/09**



Source: Wilkins et al. (2010).

**Race/ethnicity**

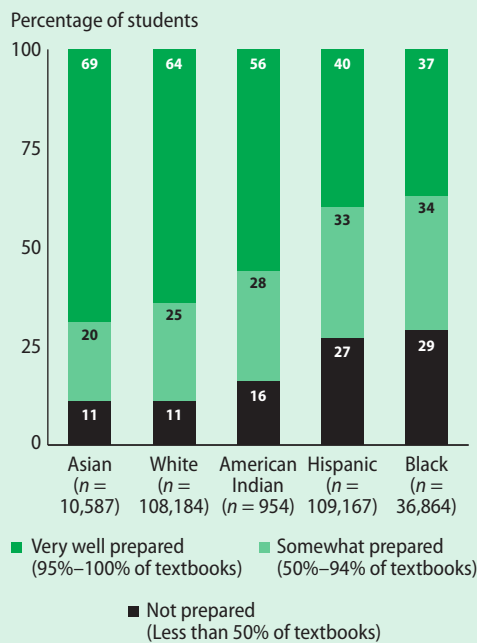
The percentage of students who were very well prepared to read college textbooks was 24 percentage points higher for White students than for Hispanic students and 27 percentage points higher for White students than for Black students (figure 3). The percentage of Asian students who were very well prepared was highest of all, 5 percentage points higher than the percentage of White students. (Additional findings are presented in table G1 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). Roughly two-thirds of Asian (69 percent) and White (64 percent) students and 56 percent of American Indian students could read nearly all of the textbooks. Roughly 2 in 5 Hispanic (40 percent) and Black students (37 percent) were able to do so.
- *Somewhat prepared* (50–94 percent of textbooks). One in five Asian students

(20 percent), 1 in 4 White students (25 percent), and slightly more than 1 in 4 American Indian students (28 percent) were somewhat prepared to read college-level textbooks. One-third of Hispanic (33 percent) and slightly more than one-third of Black students (34 percent) could also read at this level.

- *Not prepared* (less than 50 percent of textbooks). Slightly more than 10 percent of White (11 percent) and Asian (11 percent) students were not prepared to read college-level textbooks. Sixteen percent of American Indian students, 27 percent of Hispanic students, and 29 percent of Black students were not prepared.

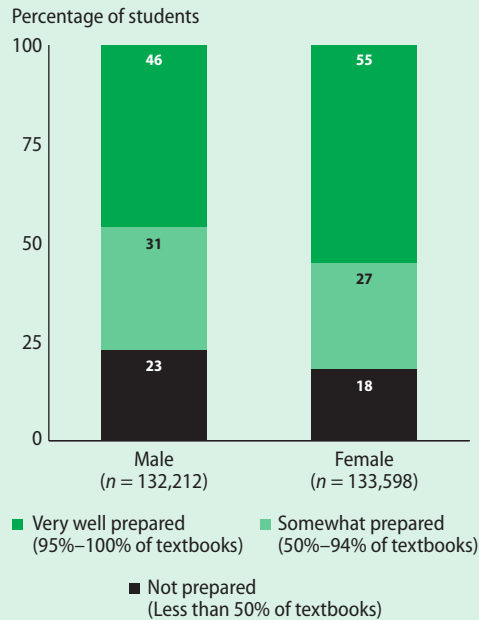
**FIGURE 3**  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by race/ethnicity, 2008/09**



Note: Black includes African American, Hispanic includes Latino, Asian includes Native Hawaiian or Other Pacific Islander, and American Indian includes Alaska Native.

Source: Authors' analysis of data described in text.

FIGURE 4  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by gender, 2008/09**



Source: Authors' analysis of data described in text.

### Gender

The percentage of students who were very well prepared to read college textbooks was 9 percentage points higher for female students than for male students (figure 4). (Additional findings are presented in table G2 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). Just over half of female students (55 percent) were very well prepared to read college-level textbooks, compared with slightly less than half of male students (46 percent).
- *Somewhat prepared* (50–94 percent of textbooks). A higher percentage of male students (31 percent) than female students (27 percent) were somewhat prepared to read the textbooks.
- *Not prepared* (less than 50 percent of textbooks). Roughly 1 in 4 male

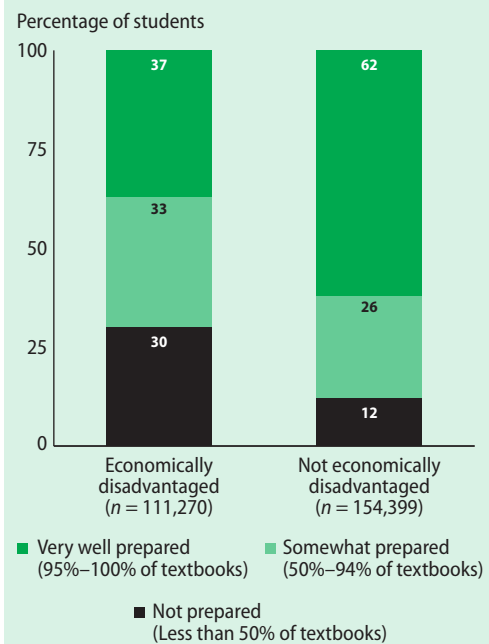
students (23 percent) and 1 in 5 female students (18 percent) were not prepared to read college-level textbooks.

### Economically disadvantaged status

The percentage of students who were very well prepared to read college textbooks was 25 percentage points lower for economically disadvantaged students than for non-economically disadvantaged students (figure 5). (Additional findings are presented in table G3 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). Nearly two-thirds of non-economically disadvantaged students (62 percent) were able to read nearly all textbooks, compared with more than one-third of economically disadvantaged students (37 percent).

FIGURE 5  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by economically disadvantaged status, 2008/09**



Source: Authors' analysis of data described in text.

- *Somewhat prepared* (50–94 percent of textbooks). Nearly 1 in 4 non-economically disadvantaged students (26 percent) was somewhat prepared to read college textbooks, compared with one-third of economically disadvantaged students (33 percent).
- *Not prepared* (less than 50 percent of textbooks). Slightly more than a tenth of non-economically disadvantaged students (12 percent) were not prepared to read college textbooks, compared with 30 percent of economically disadvantaged students.

#### At-risk status

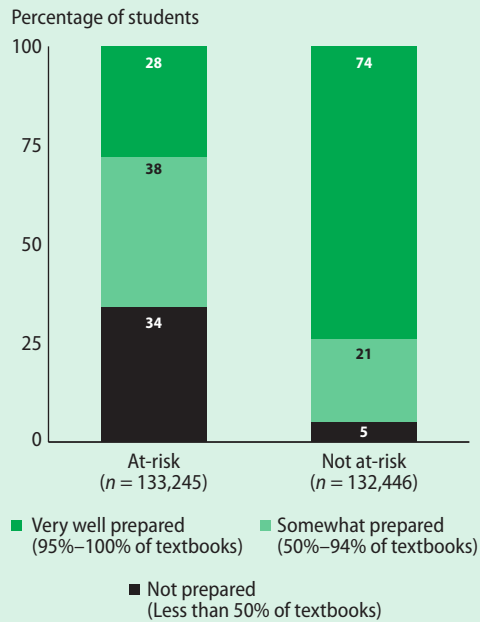
At-risk students were substantially less prepared to read and comprehend the textbooks than were students not at-risk. The percentage of students who were very well prepared to read college textbooks was 46 percentage points lower for at-risk students than for students not at-risk (figure 6). (Additional findings are presented in table G4 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). About three-fourths (74 percent) of students who were not at-risk could read nearly all textbooks, compared with just over one-quarter of at-risk students (28 percent).
- *Somewhat prepared* (50–94 percent of textbooks). About 1 in 5 students not at-risk (21 percent) was somewhat prepared to read college textbooks, compared with almost 2 in 5 at-risk students (38 percent).
- *Not prepared* (less than 50 percent of textbooks). Few of the students not at-risk (5 percent) were not prepared to read college textbooks, compared with approximately one-third of at-risk students (34 percent).

#### Limited English language proficient status

Limited English proficient (LEP) students were less prepared to read and comprehend

FIGURE 6  
Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by at-risk status, 2008/09

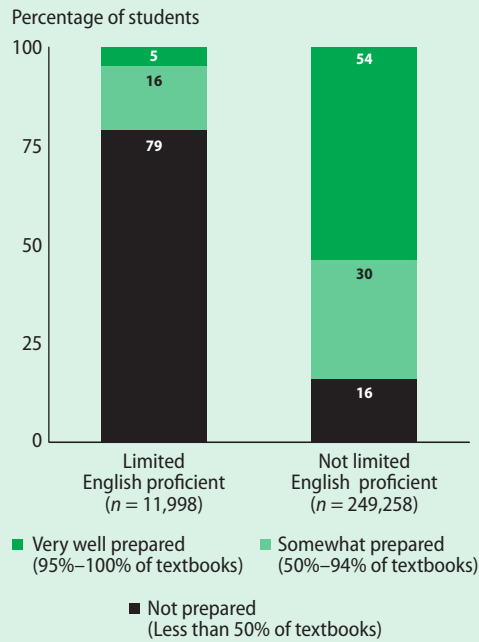


Source: Authors' analysis of data described in text.

entry-level college English textbooks than were non-LEP students (figure 7). The percentage of students who were very well prepared to read college textbooks was 49 percentage points lower for limited English proficient students than for non-LEP students. (Additional findings are presented in table G5 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). More than half of non-LEP students (54 percent) could read nearly all of the textbooks, compared with very few LEP students (5 percent).
- *Somewhat prepared* (50–94 percent of textbooks). Nearly one-third of non-LEP students (30 percent) were somewhat prepared to read college textbooks, while about half as many LEP students (16 percent) were somewhat prepared.

FIGURE 7  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by limited English proficiency status, 2008/09**



Source: Authors' analysis of data described in text.

- *Not prepared* (less than 50 percent of textbooks). Sixteen percent of non-LEP students were not prepared to read college textbooks, compared with 79 percent of LEP students.

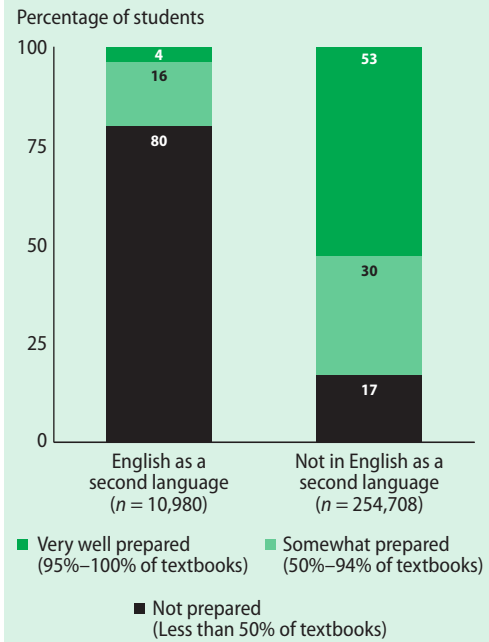
### English as a second language

The results for students in an English as a second language program (figure 8) were similar to those for LEP students. Because these student populations overlapped substantially, the findings for the groups were nearly identical. (Additional findings are presented in table G6 in appendix G.)

### Gifted and talented education status

The percentage of students who were very well prepared to read college textbooks was 41 percentage points higher for students receiving gifted

FIGURE 8  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by English as a second language status, 2008/09**

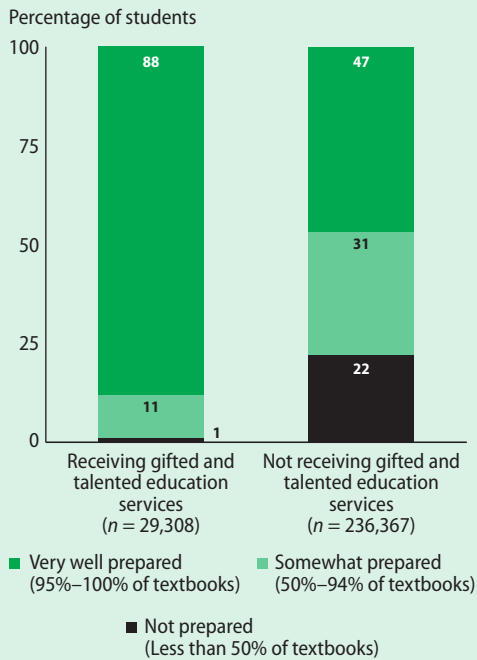


Source: Authors' analysis of data described in text.

and talented (GT) services than for students not receiving GT services (figure 9). (Additional findings are presented in table G7 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). Nearly 9 in 10 students (88 percent) receiving GT services were able to read nearly all textbooks, while less than half of students not receiving GT services (47 percent) were.
- *Somewhat prepared* (50–94 percent of textbooks). About 1 in 10 students receiving GT services (11 percent) was somewhat prepared to read college textbooks, compared with 31 percent of students not receiving GT services.
- *Not prepared* (less than 50 percent of textbooks). Less than 1 percent of students receiving GT services were not prepared to read college-level

FIGURE 9  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by gifted and talented status, 2008/09**



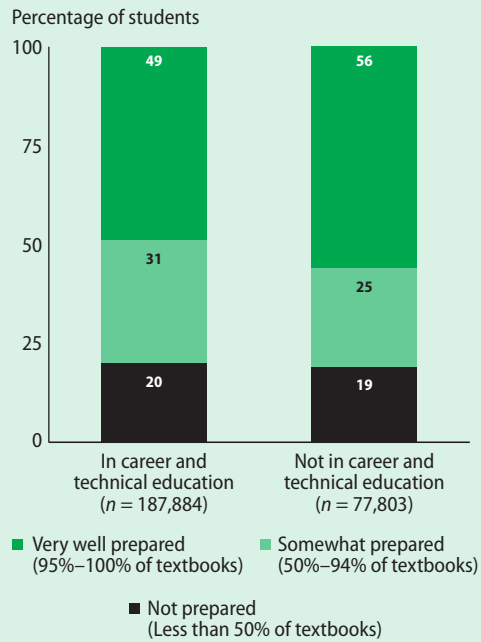
textbooks, compared with 22 percent of students not receiving GT services.

### Career and technical education

The percentage of students who were very well prepared to read college textbooks was 7 percentage points lower for students enrolled in at least one career and technical education (CTE) course than for students not enrolled in a CTE course (figure 10). (Additional findings are presented in table G8 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). Slightly less than half of students enrolled in a CTE course (49 percent) could read nearly all the college texts, compared with 56 percent of students not enrolled in a CTE course.
- *Somewhat prepared* (50–94 percent of textbooks). Close to a third of students

FIGURE 10  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by enrollment in a career and technical education course, 2008/09**



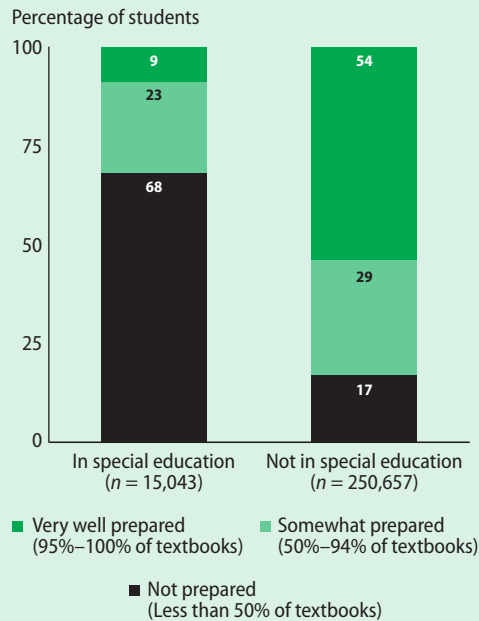
enrolled in a CTE course (31 percent) were somewhat prepared to read college textbooks, compared with a quarter of students not enrolled in a CTE course (25 percent).

- *Not prepared* (less than 50 percent of textbooks). One fifth of students enrolled in a CTE course (20 percent) were not prepared to read college texts. The results were nearly identical for students not enrolled in a CTE course (19 percent).

### Special education status

The percentage of students who were very well prepared to read college textbooks was 45 percentage points lower for students receiving special education services than for students not receiving services (figure 11).

FIGURE 11  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by special education status, 2008/09**



Source: Authors' analysis of data described in text.

(Additional findings are presented in table G9 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). Less than 1 in 10 students receiving special education services (9 percent) were able to read nearly all of the textbooks compared with more than half of those not receiving such services (54 percent).
- *Somewhat prepared* (50–94 percent of textbooks). Almost 1 in 4 students receiving special education services (23 percent) was somewhat prepared to read college textbooks, compared with almost 3 in 10 students not receiving such services (29 percent).
- *Not prepared* (less than 50 percent of textbooks). The percentage of students receiving special education services

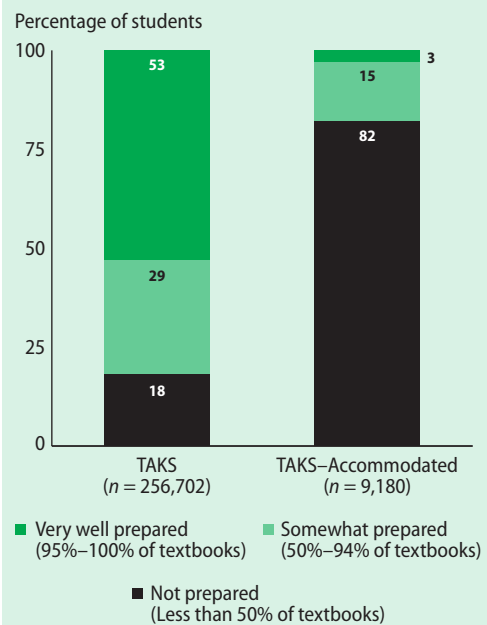
that were not prepared to read college textbooks (68 percent) was four times that of students not receiving special education services (17 percent).

#### TAKS version taken

Students who took the TAKS–Accommodated<sup>15</sup> were less prepared to read entry-level college English textbooks than were students who took the regular TAKS (figure 12). The percentage of students who were very well prepared to read college textbooks was 50 percentage points lower for students taking TAKS–Accommodated than for students taking the regular TAKS. This is the largest gap within any subgroup. (Additional findings are presented in table G10 in appendix G.)

- *Very well prepared* (95–100 percent of textbooks). Very few of the students

FIGURE 12  
**Percentage of Texas grade 11 students prepared to read and comprehend different percentages of textbooks, by TAKS version completed, 2008/09**



Source: Authors' analysis of data described in text.



who took the TAKS–Accommodated (3 percent) were able to read nearly all textbooks, compared with 53 percent of students who took the regular TAKS.

- *Somewhat prepared* (50–94 percent of textbooks). Fifteen percent of students who took the TAKS–Accommodated were somewhat prepared to read college textbooks, compared with almost twice the percentage of students who took the regular TAKS (29 percent).
- *Not prepared* (less than 50 percent of textbooks). More than four-fifths of students who took the TAKS–Accommodated (82 percent) were not prepared to read college-level textbooks, compared with less than a fifth of students who took the regular TAKS (18 percent).

### How to compare local data with statewide normative results

An Excel® tool is provided that allows a district to compare the college reading readiness levels of local students with the statewide normative results (it can be downloaded at <http://ies.ed.gov/ncee/edlabs/projects/project.asp?projectID=261>). An overview of how to use the tool is provided here; complete instructions are included in the Excel® file. Two steps are involved in comparing subgroup data with statewide normative data: acquire the frequency of the Lexiles for the students in the subgroup of interest and use the Excel® tool to compare results for any local student subgroup, at any desired level of college reading readiness, with results for any student subgroup in Texas.

#### Entering Lexile frequency data

The frequency distributions of Lexiles for the comparisons in this report are derived from Lexiles obtained from the English Language Arts and Reading (ELAR) subtest of the TAKS.<sup>16</sup> Schools and districts in Texas have access to data files that include both TAKS scaled scores

(TAKS-ELAR) and the corresponding Lexile for each student. A school or district can use Excel® or another type of data processing software to read the student data file (with student Lexile levels) and generate the frequency distribution for one or more subgroups of interest. Table 3 shows an example of a local frequency distribution for a specific subgroup, in this case Hispanic students. These data on the number of Hispanic students in district X who obtained each of the Lexile scores can then be entered into the Excel® tool. The data can be hand entered or copied from another document into the Excel® tool. Data for other subgroups can also be entered based on the subgroups of interest.

#### Making local to state comparisons

Once the data are entered for the subgroups of interest, the results can be compared at any

TABLE 3

**Frequencies of Lexiles for grade 11 Hispanic students in fictitious Texas district X**

Lexile	Frequency
859	2
882	9
901	8
920	13
939	16
958	18
977	16
996	31
1015	44
1034	51
1053	64

*Note:* Because Texas Assessment of Knowledge and Skills (TAKS) scores for 2003 (used in the original 2005 linking study) are considered equivalent to TAKS scores in later years, data can be compared for any year after 2003. However, the equating process from year-to-year can result in TAKS scaled scores that were not previously observed in 2003 appearing in the gap between Lexiles shown in this table (for example, 935L). Whenever a new TAKS scaled score appears a corresponding Lexile measure has to be estimated. Additional information on this process can be found in appendix H.

desired level of college reading readiness with results for any student subgroup in the state of Texas.

- The user selects the *student subgroup* for each of the local and state comparison groups using the drop-down menus on the graph below the state and local labels.
- The user selects the *percentage of college textbooks of interest* using the scroll bar on the left side of the screen.
- The tool then generates a graph showing the percentage of students who can read at least the user-selected percentage of college textbooks for the state subgroup and for the local subgroup.

For example, consider an administrator in district X who wants to know how many Hispanic students in the district are prepared to read and comprehend 50 percent of college textbooks used in the first-year English courses in the UT system. Figure 13 illustrates the selection of 50 percent of college textbooks and the related graph created by the tool for the

comparison of local Hispanic students in district X with Hispanic students statewide.

In this example, 48 percent of the local Hispanic students were able to read 50 percent of the college textbooks, which is lower than the 70 percent of Hispanic students statewide who can read at that level.

In the next example, fictitious district Y has a high percentage of Hispanic students and very few White students. The district is interested in determining how Hispanic students in the district are doing compared with White students statewide in Texas to determine whether a gap needs to be addressed.

Using the online Excel® tool, district Y is able to determine that 94 percent of Hispanic students in the district were able to read 50 percent of the college textbooks, which is higher than the 83 percent of White students statewide who can read at that level (figure 14).

### Application

School districts can use the comparison of local subgroup college reading preparedness levels

FIGURE 13

**A comparison of the percentage of grade 11 Hispanic students in fictitious Texas district X and statewide who are prepared to read and comprehend 50 percent of textbooks, 2008/09**

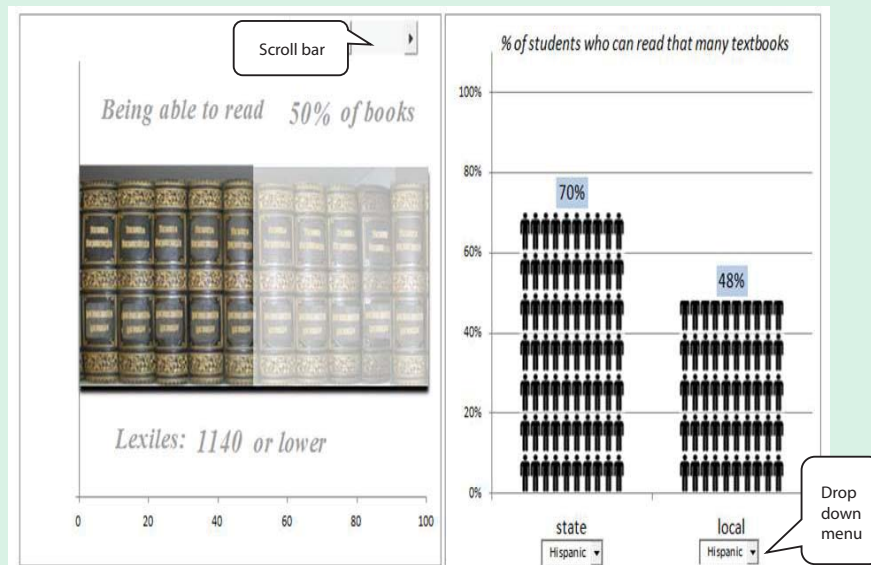
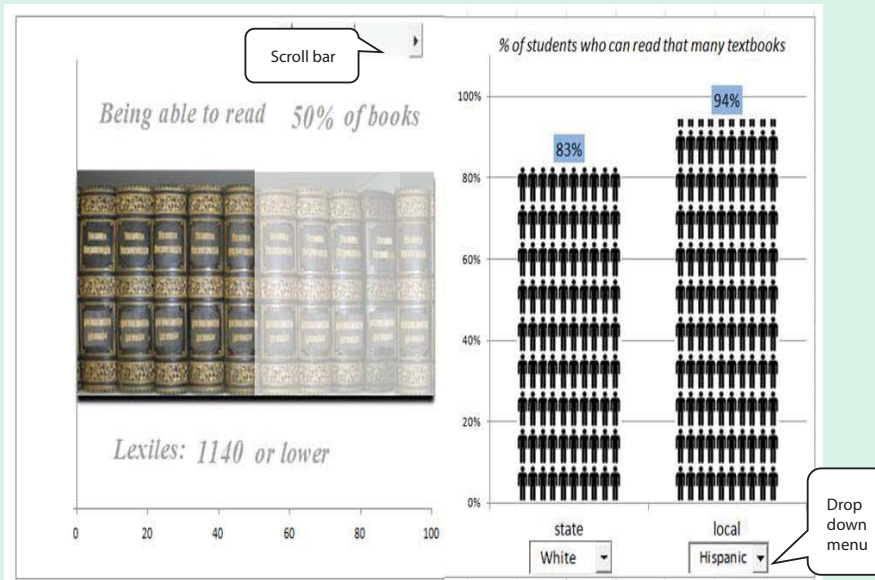


FIGURE 14

**A comparison of the percentage of grade 11 Hispanic students in fictitious Texas district Y and of grade 11 White students statewide who are prepared to read and comprehend 50 percent of textbooks, 2008/09**



with statewide subgroup preparedness levels to stimulate and guide deeper exploration. For example, district X (described in figure 13) could gather more data to develop hypotheses about why a smaller percentage of Hispanic students in the district than of Hispanic students statewide are prepared to read entry-level college textbooks. Sample questions that could be explored using other data collection and analysis include the following:

- Are the lower achieving Hispanic students English language learner students? Is current instruction for English language learner students leading to student improvement that closes gaps with other groups?
- Are the lower achieving students reclassified English language learner students?<sup>17</sup> If so, what additional supports are needed to improve their development of academic English?
- How many Hispanic students are enrolled and successful in advanced

courses (such as Advanced Placement)? If a lower percentage of Hispanic students are enrolled, what policies exist for getting students into these advanced courses? If a lower percentage of Hispanic students are successful in an advanced course, what additional student support or professional development for teachers might be needed to improve the likelihood of student success?

- For the courses in which Hispanic students are enrolled, are the Lexile levels of the textbooks used high enough to prepare the students for entry-level college reading? If not, what steps can be taken to increase the Lexile difficulty of the textbooks used in these courses?
- Is each Hispanic student who is not prepared to read at college textbook levels receiving interventions designed to accelerate reading skill acquisition? If not, what additional interventions may need to be implemented?

Although these questions cannot be addressed with the Excel® tool, the tool can assist administrators in identifying areas for further research and exploration.

### Study limitations

This study has several limitations:

- The study examined only one aspect of college and career readiness.
- The findings described grade 11 public school students in Texas, most of whom were likely one year from graduating and entering college. Because no grade 12 TAKS assessment data were collected, the findings do not reflect any reading improvement that might have occurred during the senior year of high school.
- The textbooks used in entry-level English courses at University of Texas system schools are likely to change, and the difference between the fall 2009 textbooks and textbooks used in subsequent years is unknown.
- The findings excluded textbooks for subjects other than first-year English courses. The ability to read subject-specific texts is critical in college, particularly for subject areas in a student's degree focus. The Lexile® Framework does not differentiate between subject domains, even though the vocabulary for each can differ substantially. Although the methodology could be applied to textbooks in a variety of subject areas, there are limitations in doing so. Lexile measures can be calculated only for books with at least 50 percent prose (L. Whitehead, Measurement Services Manager, MetaMetrics, Inc., personal communication, November 10, 2009). For some subject areas, it might not be possible

to include a representative sample of textbooks that meet this criterion.

### Suggestions for further research

The findings from this study suggest several research questions that future studies could examine.

- The study methodology could be used to measure the reading requirements for other postsecondary activities (for example, entering specific types of jobs or enrolling in community college), and the percentage of students or student subgroups ready for reading at the required level could be estimated for each of these postsecondary options.
- Districts could analyze the Lexile levels of their high school textbooks (often provided by the publishers) to determine whether the textbooks are preparing students for the reading demands of the institutions that most of their students attend, as well as their state and local postsecondary institutions.
- Using Lexiles, districts could examine how the trajectory of increasing reading demands across grades K–12 in the local curriculum aligns with the reading demands of postsecondary institutions, both regionally and statewide.
- This general methodology could be applied in any state that administers assessments aligned with the Lexile scale. In 2010, 21 states provided student Lexile measures as part of their state assessment systems (MetaMetrics, Inc. 2010). Although state assessments linked to Lexiles (such as TAKS scores) are a convenient way to obtain student Lexile measures, the methodology can be applied anywhere Lexile measures are available.<sup>18</sup>

### Appendix A. Sample text accompanied by estimated Lexile values derived using the Lexile® Framework for Reading

As discussed in the methodology section of this report, Lexile values are derived by analyzing a text on the basis of the average length of the sentences (number of words) in a passage and the average difficulty of words in the passage. The average difficulty of words is estimated from each word’s frequency of appearance in a large MetaMetrics database of thousands of scanned books. The less frequent a word, the more difficult it is anticipated to be.

Sample text drawn from books that were analyzed for the current study, along with the Lexile value derived for each book, are provided in table A1. As described in Stenner et al. (2006), when a book is analyzed, an auto-edit function removes irrelevant and nontext features (such as figures and tables), and the file is divided into 125-word slices. A Lexile value is derived for each slice and these values are combined to assign a Lexile value for the book as a whole. Therefore, the actual Lexile values for the individual passages in table A1 may vary somewhat from the Lexile values reported in table A1, derived for each book as a whole.

TABLE A1  
Samples of text passages at various Lexile measures

Lexile measure	Sample
670	<p>Refer to all the physical activities you and your classmates listed at the beginning of this chapter. Put these activities into the appropriate categories of sports, exercises, and martial arts in the chart below. Some activities may belong in more than one category. For example, swimming can be a sport or an exercise.</p> <p>Imagine that a friend has asked you to give suggestions for activities that children can do in order to get exercise. Work with two or three classmates. Make a list of 10 ways that children can get exercise that would be fun for them. When you are finished, write your suggestions on the blackboard. As a class, decide which 10 activities children will enjoy the most.</p> <p>Refer back to the second follow-up activity. Write a letter to your friend and describe your 10 recommendations.</p> <p>Write in your journal. Describe the most exciting sports event you have ever watched or participated in. What was the event? What happened? Why was it exciting for you? (Smith and Mare 2004a, p. 78)</p> <hr/> <p>Read the complete passage. When you are finished, you will answer the questions that follow.</p> <p>For thousands of years, people have looked up at the night sky and looked at the moon. They wondered what the moon was made of. They wanted to know how big it was and how far away it was. One of the most interesting questions was “Where did the moon come from?” No one knew for sure. Scientists developed many different theories, or guesses, but they could not prove that their ideas were correct.</p> <p>Then, between 1969 and 1972, the United States sent astronauts to the moon. They studied the moon and returned to Earth with rock samples. Scientists have studied these pieces of rock, the moon’s movements, and information about the moon and the Earth. They can finally answer questions about the origin of the moon.</p> <p>Today most scientists believe that the moon formed from the Earth. They think that a large object hit the Earth early in its history. Perhaps the object was as big as Mars. When the object hit the Earth, huge pieces of the Earth broke off. These pieces went into orbit around the Earth. After a brief time, the pieces came together and formed the moon. (Smith and Mare 2004b, pp. 137–38)</p>

(CONTINUED)

TABLE A1 (CONTINUED)

**Samples of text passages at various Lexile measures**

Lexile measure	Sample
1020	<p>Motivating goals are your goals, not someone else's. You don't want to be lying on your deathbed some day and realize you have lived someone else's life. Trust that you know better than anyone else what you desire.</p> <p>Motivating goals focus your energy on what you do want rather than on what you don't want. So translate negative goals into positive goals. For example, a negative goal to not fail a class becomes a positive goal to earn a grade of B or better. I recall a race car driver explaining how he miraculously kept his spinning car from smashing into the concrete racetrack wall: "I kept my eye on the track, not the wall." Likewise, focus your thoughts and actions on where you do want to go rather than where you don't want to go, and you, too, will stay on course. (Downing 2008, p. 64)</p> <p>Get to the exam room early and find a comfortable place. Set up your supplies (pens, pencils, paper, white-out, allowed books, calculator, and so on). Have a clock or watch so you can keep track of time. You might even bring a picture that inspires you, like a photo of your family or a picture of you in a graduation gown. If it's a long exam, you might want to bring water and snacks, if they are allowed.</p> <p>Right before the exam is handed out, relax, say your affirmation(s), and visualize your success once more. If you have read your assignments, studied regularly, attended classes, and done everything that successful students do, this last-minute mental preparation will enable you to do your best work on the test. Take a deep breath and begin. (Downing 2008, p. 170)</p>
1110	<p>Although many people think of correctness as absolute—based on hard-and-fast, unchanging rules—instructors and students know better. We know that there are rules but that the rules change all the time. "Is it okay to use I in essays for this class?" asks one student. "My high school teacher wouldn't let us." Such questions show that rules clearly exist but that they are always shifting and thus need our ongoing attention.</p> <p>Shifting standards do not mean that there is no such thing as correctness in writing—only that correctness always depends on some context. Correctness is not so much a question of absolute right or wrong as a question of the way a writer's choices are perceived by readers. As writers, we all want to be considered competent and careful. We know that our readers judge us by our control of the conventions we have agreed to use. As Robert Frost once said of poetry, trying to write without honoring the conventions and agreed-upon rules is like playing tennis without a net.</p> <p>A major goal of this book is to help you understand and control the surface conventions of academic and professional writing. Since you already know most of these rules, the most efficient way to proceed is to focus on those that are still unfamiliar or puzzling. (Lunsford 2009, p. 1)</p> <p>Does your understanding of the assignment fit with that of other students? Talking over an assignment with classmates is one good way to test your understanding.</p> <p>If you find a great deal of specialized vocabulary, any of the following procedures may prove helpful:</p> <p>Keep a log of unfamiliar or confusing words used in context. Check the terms in your textbook's glossary or in a specialized dictionary. Students entering the discipline of sociology, for instance, may refer to the Dictionary of the Social Sciences.</p> <p>Check to see if your textbook has a glossary of terms or sets off definitions in italics or boldface type.</p> <p>Try to start using or working with key concepts. Even if they are not yet entirely clear to you, working with them will help you come to understand them. For example, try to plot the narrative progression in a story even if you are still not entirely sure of the definition of narrative progression.</p> <p>If you belong to an email list or online discussion groups—or even if you are browsing Web sites related to a particular field—take special note of the ways technical language or disciplinary vocabulary is used there. Look for definitions of terms on a Web site's FAQ page. (Lunsford 2009, p. 32)</p>

(CONTINUED)

TABLE A1 (CONTINUED)

**Samples of text passages at various Lexile measures**

Lexile measure	Sample
1140	<p>Regardless of when anxiety about a speech strikes, the important thing to remember is to manage your anxiety and not let it manage you—by harming your motivation, or by causing you to avoid investing the time and energy required to prepare and deliver a successful speech. How can you do this? The first step is to have a clear and thorough plan for each speech.</p> <p>Making progress on any task increases confidence. Preparing your speech in advance will lessen your nervousness considerably. Remember, just as sitting around wishing you were in better physical shape won't firm you up, merely wishing your speech will be a success won't make it so. To ensure a positive result, prepare the speech well in advance and rehearse it several times. (O'Hair et al. 2007, p. 30)</p> <p>People who listen to speeches take a journey of sorts, and they want and need the speaker to acknowledge the journey's end. The more emotional the journey, as in speeches designed to touch hearts and minds, the greater the need for logical and emotional closure.</p> <p>One way to alert the audience that a speech is about to end is to use a transition statement or phrase. Phrases such as <i>Finally</i>, <i>Looking back</i>, <i>In conclusion</i>, and <i>Let me close by saying</i> all signal closure.</p> <p>You can also signal closure more subtly, by your manner of delivery. For example, you can vary your tone, pitch, rhythm, and rate of speech to indicate that the speech is winding down.</p> <p>Once you've signaled the end of your speech, do finish in short order (though not abruptly). (O'Hair et al. 2007, p. 115)</p>
1260	<p>Early in the process of jotting down your ideas on a topic, stop to ask yourself, "What might reasonably be offered as an objection to my view?"</p> <p>Critical thinking requires us to use our imaginations, seeing things from perspectives other than our own and envisioning the likely consequences of our positions. This sort of imaginative thinking—grasping a perspective other than our own and considering the possible consequences of positions—is, as we have said, very different from daydreaming, an activity of unchecked fantasy.</p> <p>If we engage in imaginative, analytic, and evaluative thought, we will have second and third ideas; almost to our surprise we may find ourselves adopting a position that we initially couldn't imagine we would hold. As we think about the West Virginia law, we might find ourselves coming up with a fairly wide variety of ideas, each triggered by the preceding idea but not necessarily carrying it a step further. For instance, we may think X and then immediately think, "No, that's not quite right. In fact, come to think of it, the opposite of X is probably true." We haven't carried X further, but we have progressed in our thinking. (Barnet and Bedau 2008, p. 10)</p> <p>An example of false dichotomy can be found in the essay by Jeff Jacoby on flogging. His entire discussion is built on the relative superiority of whipping over imprisonment, as though there was no alternative punishment worth considering. But of course, there is, notably community service.</p> <p>"Poverty causes crime," "Taxation is unfair," "Truth is stranger than fiction"—these are examples of generalizations that exaggerate and therefore oversimplify the truth. Poverty as such can't be the sole cause of crime because many poor people do not break the law. Some taxes may be unfairly high, others unfairly low—but there is no reason to believe that every tax is unfair to all those who have to pay it. Some true stories do amaze us as much or more than some fictional stories, but the reverse is true, too. In the language of the Toulmin Method, oversimplification is the result of a failure to use suitable modal qualifiers in formulating one's claims or grounds or backing. (Barnet and Bedau 2008, p. 364)</p>

(CONTINUED)

TABLE A1 (CONTINUED)

**Samples of text passages at various Lexile measures**

Lexile measure	Sample
1300	<p>Industrial landowners and users, especially lumbermen and stockmen, are inclined to wail long and loudly about the extension of government ownership and regulation to land, but with notable exceptions they show little disposition to develop the only visible alternative: the voluntary practice of conservation on their own lands.</p> <p>When the private landowner is asked to perform some unprofitable act for the good of the community, he today assents only with outstretched palm. If the act costs him cash this is fair and proper, but when it costs only forethought, open-mindedness, or time, the issue is at least debatable. The overwhelming growth of land-use subsidies in recent years must be ascribed, in large part, to the government's own agencies for conservation education: the land bureaus, the agricultural colleges, and the extension services. As far as I can detect, no ethical obligation toward land is taught in these institutions. (Jacobus 2010, p. 755)</p> <p>The Greek states were limited in size, not as is often thought solely or even chiefly by the physiography of the country, but by some instinctive feeling of the Greek mind that a state is necessarily a natural association of people bound together by ties of kinship and a common tradition of rights and obligations. There must then, as Aristotle said, be a limit.</p> <p>For if the citizens of a state are to judge and distribute offices according to merit, they must know each other's characters; where they do not possess this knowledge, both the elections to offices and the decisions in the law courts will go wrong. Where the population is very large they are manifestly settled by haphazard, which clearly ought not to be. Besides, in overpopulous states foreigners and metics will readily acquire citizenship, for who will find them out? (Jacobus 2010, p. 111)</p>
1450	<p>While there are indeed limits to what we will be able to produce from grain, cellulose ethanol production will augment, not replace, grain-based ethanol. The conversion of feedstocks like corn stover, corn fiber, and corn cobs will be the "bridge technology" that leads the industry to the conversion of other cellulosic feedstocks and energy crops such as wheat straw, switchgrass, and fast-growing trees. Even the garbage, or municipal solid waste, Americans throw away today will be a future source of ethanol.</p> <p>The ethanol industry today is on the cutting edge of technology, pursuing new processes, new energy sources, and new feedstocks that will make tomorrow's ethanol industry unrecognizable from today's. Ethanol companies are already utilizing cold starch fermentation, corn fractionation, and corn oil extraction. Companies are pursuing more sustainable energy sources, including biomass gasification and methane digesters. And, as stated, there is not an ethanol company represented by the RFA that does not have a cellulose-to-ethanol research program. (Easton 2009, pp. 209–10)</p> <p>Nuclear energy is a carbon-free, secure, and reliable energy source for today and for the future. In addition to electricity production, nuclear energy has the promise to become a critical resource for process heat in the production of transportation fuels, such as hydrogen and synthetic fuels, and desalinated water. New nuclear plants are imperative to meet these vital needs.</p> <p>To ensure a sustainable future for nuclear energy, several requirements must be met. These include safety and efficiency, proliferation resistance, sound nuclear materials management, and minimal environmental impacts. While some of these requirements are already being satisfied, the United States needs to adopt a more comprehensive approach to nuclear waste management. The environmental benefits of resource optimization and waste minimization for nuclear power must be pursued with targeted research and development to develop a successful integrated system with minimal economic impact. Alternative nuclear fuel cycle options that employ separations, transmutation, and refined disposal (e.g., conservation of geologic repository space) must be contrasted with the current planned approach of direct disposal, taking into account the complete set of potential benefits and penalties. In many ways, this is not unlike the premium homeowners pay to recycle municipal waste. (Easton 2009, p. 346)</p>

Note: See table D2 for full reference information for the books cited; text passages are taken from textbooks examined as part of this study.

Source: Authors' compilation based on MetaMetrics, Inc.'s analysis of books.



## Appendix B. Description of grade 11 exit-level Texas Assessment of Knowledge and Skills for English language arts and reading

This appendix describes the grade 11 Texas Assessment of Knowledge and Skills for English language arts and reading (TAKS).

### Versions of the TAKS

As of the 2007/08 school year, four versions of the grade 11 exit-level TAKS were available: TAKS, TAKS–Accommodated, TAKS–Modified, and TAKS–Alternate. The Admission, Review, and Dismissal committee decides which version of the exam to give to a student receiving special education services. The Texas Education Agency publishes an annual committee decisionmaking process for the Texas Assessment Program manual to guide these decisions. For exit-level exams, no exemptions are allowed because of limited English proficiency (Texas Secretary of State 2005) or disability (Texas Project First n.d.). The data in this study are from the TAKS and TAKS–Accommodated, the versions included in state accountability reporting (Texas Education Agency 2008a).

TAKS–Accommodated is available to students receiving special education services and instruction at or near grade level (Texas Project First n.d.). It features format changes, such as a larger font and fewer items per page, and does not include field test questions (Texas Education Agency 2008a). These accommodations do not preclude interpreting TAKS–Accommodated scores the same way as regular TAKS scores.

TAKS–Modified is a modified version of the TAKS available to “students receiving special education services who have a disability that significantly affects academic progress in the grade level curriculum and precludes the achievement of grade level proficiency within a school year” (Texas Education Agency n.d. a). It features format changes (such as larger font,

fewer items per page) and test design modifications (such as fewer answer choices, simpler vocabulary and sentence structure; Texas Education Agency n.d. a). Because the design modifications affect the content of the test, TAKS–Modified scores cannot be interpreted the same way as TAKS and TAKS–Accommodated scores.

TAKS–Alternate is an alternative version of the TAKS available to “students receiving special education services that have the most significant cognitive disabilities and are unable to participate in the other statewide assessments even with substantial accommodations and/or modifications” (Texas Education Agency 2007). For this test, teachers observe students as they complete state-developed assessment tasks (Texas Project First n.d.). Because the content of the TAKS–Alternate differs from that of the TAKS and TAKS–Accommodated, TAKS–Alternate scores cannot be interpreted the same way as TAKS and TAKS–Accommodated scores.

### TAKS reading objectives and skills important for postsecondary success

The grade 11 TAKS covers three exit-level reading objectives, each with several subsections (Texas Education Agency 2004, p. 5):

- Objective 1: the student demonstrates a basic understanding of culturally diverse written texts.
- Objective 2: the student demonstrates an understanding of the effects of literary elements and techniques in culturally diverse written texts.
- Objective 3: the student demonstrates the ability to analyze and critically evaluate culturally diverse written texts and visual representations.

The description of objective 1 states: “Before students can form their own ideas about a text, they must be able to understand its basic meaning. To develop an initial understanding of what they read, students must

be able to do four things: (1) use context and other word-identification strategies to help them understand the meaning of the words they read, (2) recognize important supporting details, (3) understand what a selection or a portion of a selection is mostly about—in other words, understand the ‘gist’ of that selection, and (4) produce an accurate summary of a selection” (Texas Education Agency 2004, p. 12). These kinds of basic comprehension skills are reported to be central to college readiness in reading. As such leading researchers as David Conley note, “knowing how to slow down to understand key points, when to re-read a passage, and how to underline key terms and concepts strategically” are core skills for college readiness (Conley 2007, p. 12).

The description of objective 2 notes that a student’s “understanding must go beyond mere identification to encompass the ways in which the parts of a story, singly and in combination, contribute to its overall meaning” (Texas Education Agency 2004, p. 14). Objective 3 requires that students “be aware of the way an author crafts a selection . . . [the] purpose for writing, organizational decisions, point of view or attitude toward the subject, and unique use of language” (Texas Education Agency 2004, p. 16).

Objectives 2 and 3 parallel the findings of a widely cited ACT report *Reading between the lines: what the ACT reveals about college readiness in reading*, which states that “[w]hat appears to differentiate those who are more like[ly] to be [college] ready from those who are less likely is their proficiency in understanding complex texts” (ACT, Inc. 2006, p. 16). The complexity of texts is identified on the basis of the complexity of the relationships between ideas or characters (subtle, involved, or embedded relationships), as well as the text’s richness (information conveyed through data, literary devices), structure, style, vocabulary, and purpose (ACT, Inc. 2006, p. 17).

A common understanding among researchers of college readiness standards is that students who struggle with English language arts will also struggle with other core subjects, such as social studies, science, and math (ACT Inc. 2006; Conley 2007). This awareness is echoed in the TAKS exit-level information booklet (Texas Education Agency 2004). Demonstrating the skills and strategies required of students to comprehend the range and variety of reading materials encountered in entry-level college courses is indicative of college readiness (Conley 2007).

### Appendix C. Subgroup descriptions

Data related to subgroups was obtained from the Texas Education Agency Academic Excellence Indicator System (Texas Education Agency 2009b). The following is a description of each subgroup used in this report:

- *Gender.* Each student is identified as either male or female.
- *Race/ethnicity.* Each student is identified as belonging to one of the following five groups: American Indian, Asian, Black, Hispanic, or White. Black includes African American, Hispanic includes Latino, Asian includes Native Hawaiian or Other Pacific Islander, and American Indian includes Alaska Native.
- *Economically disadvantaged status.* Each student is identified as economically disadvantaged or not economically disadvantaged. Students who are enrolled in free or reduced-price lunch programs or receiving another form of public assistance are identified as economically disadvantaged.
- *At-risk status.* Each student is identified as at-risk or not at-risk. A student meeting one or more of the following criteria is identified as at-risk:
  - Did not advance to the next for one or more school years.
  - Is in grades 7–12 and did not maintain an average equivalent to 70 on a scale of 100 in two or more subjects in the foundation curriculum during a semester in the preceding or current school year.
  - Did not perform at the satisfactory level on an assessment administered under Texas Education Code subchapter B, chapter 39, and has not in the previous or current school year subsequently performed on that instrument or another appropriate instrument at a level equal to at least 110 percent of the level of satisfactory performance on that instrument.
- Is in prekindergarten, kindergarten, or grades 1–3 and did not perform at the satisfactory level on a readiness test or assessment instrument administered during the current school year.
- Is pregnant or is a parent.
- Was placed in an alternative education program in the preceding or current school year.
- Was expelled during the preceding or current school year.
- Is on parole, probation, deferred prosecution, or other conditional release.
- Was previously reported to have dropped out of school.
- Is limited English proficient.
- Is in the custody or care of the Department of Protective and Regulatory Services or has been referred to the department during the current school year by a school official, officer of the juvenile court, or law enforcement official.
- Is homeless.
- Resided the preceding school year or the current school year in a residential placement facility in the district, such as a detention facility, substance abuse treatment facility, emergency shelter, psychiatric hospital, halfway house, or foster group home.
- *Limited English proficiency status.* Each student is identified as limited English proficient or not limited English proficient by a language proficiency assessment committee, based on a home language survey and an assessment if the home language survey indicates a language other than English. Some

limited English proficient students do not receive bilingual or English as a second language instruction, and some not limited English proficient students might have been classified as limited English proficient in previous years.<sup>19</sup>

- *English as a second language status.* Each student is identified as being enrolled or not enrolled in a state-approved English as a second language program, which for grades 9–12 includes intensive instruction in English from teachers trained in recognizing and working with language differences.
- *Gifted and talented education status.* Each student is identified as receiving gifted and talented education services or not. Students can be identified for gifted and talented education services for a variety of reasons—overall intellectual ability, math ability, or creativity—and might not be considered gifted and talented in English language arts.
- *Career and technical education status.* Each student is identified as being enrolled in at least one career and technical education course or not enrolled. Career and technical education students are those enrolled in one or more state-approved vocational education courses.
- *Special education status.* Each student is identified as being in a special education program or not. Special education students are those who use special

education support services, supplementary aids, or other special arrangements. If they are not in one of these programs, they are not identified as having a special education status. Students receiving special education services may take any version of the Texas Assessment of Knowledge and Skills (TAKS): TAKS, TAKS–Accommodated, TAKS–Modified, or TAKS–Alternate; however, only students who took the TAKS or TAKS–Accommodated are included in this study. (See appendix B for more information on the different versions of the TAKS, including how version eligibility was determined.)

- *Version of the grade 11 TAKS or TAKS–Accommodated.* The grade 11 TAKS and the grade 11 TAKS–Accommodated are considered by the Texas Education Agency to be equivalent.<sup>20</sup> All students who complete the TAKS–Accommodated receive special education services, though not all students receiving special education services take the TAKS–Accommodated. The performance of the overall student population includes both students who took the TAKS and students who took the TAKS–Accommodated. This additional subgroup comparison was included to compare the results separately for the two versions and examine the effect of pooling scores from both groups of students.

### Appendix D. Textbooks used by the University of Texas system schools

The textbook population for this study was the required textbooks used in entry-level college English courses at the nine schools within the University of Texas system. The first step in identifying the appropriate textbook population was to determine the entry-level English

courses at each university. Texas uses a common course numbering system to ensure that courses are comparable, so students can transfer credits from one Texas institution to another (Texas Common Course Numbering System n.d.). This system was used in consultation with the Texas Higher Education Coordinating Board to identify the applicable courses (table D1).

TABLE D1

**Entry-level English courses, by University of Texas system school**

University of Texas system school	Course number	Course title
Arlington	ENGL 1301	Critical Thinking, Reading, and Writing I
	ENGL 1302	Critical Thinking, Reading, and Writing II
Austin	RHE 306	Rhetoric and Composition
Brownsville	ENGL 1301	English Composition I
	ENGL 1302	English Composition II
	SPCH 1315	Applied Communication
	SPCHU 1318	Interpersonal Communication
Dallas	RHET 1101	Oral Communication / Critical Thinking
	RHET 1302	Rhetoric
El Paso	COMM 1301	Public Speaking
	COMM 1302	Business/Professional Communication
	ENGL 0111	Expository Composition Workshop
	ENGL 1311	English Composition
	ENGL 1312	Research and Critical Writing
	ESOL 1309	Writing and Reading English for Non-Native Speakers
	ESOL 1311	Expositional English Composition for Speakers of English as a Second Language (ESL)
	ESOL 1312	Research and Critical Writing for Speakers of English as a Second Language (ESL)
	ESOL 1406	Basic English Sentence Structure
	ESOL 1610	Intermediate English for Speakers of Other Languages II
ESOL 1910	Intermediate English for Speakers of Other Languages I	
Pan American	COMM 1302	Introduction to Communication
	COMM 1303	Presentational Speaking
	ENG 1301	Composition
	ENG 1302	Rhetoric
Permian Basin	ENGL 1301	Composition I
	ENGL 1302	Composition II

(CONTINUED)

TABLE D1 (CONTINUED)

**Entry-level English courses, by University of Texas system school**

University of Texas system school	Course number	Course title
San Antonio	COM 1043	Introduction to Communication
	COM 1053	Business and Professional Speech
	WRC 0103	Developmental Writing
	WRC 1013	Freshman Composition I
	WRC 1023	Freshman Composition II
Tyler	ENGL 1301	Grammar and Composition I
	ENGL 1302	Grammar and Composition II
	SPCM 1315	Fundamentals of Speech Communication

Source: Texas Common Course Numbering System n.d.

Next, campus bookstores at each institution were contacted to identify required readings for each section of each course. Table D2 lists the

83 textbooks required in entry-level English courses at University of Texas system schools and their corresponding Lexile measures.

TABLE D2

**Lexile measures for textbooks required by entry-level English courses at University of Texas system schools, fall 2009**

Textbook	Lexile measure
Aaron, J. (2010). <i>The Little, Brown compact handbook</i> (7th ed.). New York: Pearson/Longman.	1110
Adler, R., and Proctor, R. (2006). <i>Looking out, looking in</i> (12th ed.). Belmont, CA: Wadsworth/Cengage.	1140
Ainsworth, A. (2008). <i>75 arguments</i> . Boston: McGraw-Hill.	1280
Atwan, R. (2008). <i>The best American essays</i> (5th ed.). Boston: Houghton Mifflin.	1190
Axelrod, R., and Cooper, C. (2008). <i>The St. Martin's guide to writing</i> (8th ed.). Boston: Bedford/St. Martin's.	1240
Axelrod, R., Cooper, C., and Warriner, A. (2007). <i>Reading critically, writing well: a reader and guide</i> (8th ed.). Boston: Bedford/St. Martin's.	1240
Barnet, S., and Bedau, H. (2008). <i>Current issues and enduring questions: a guide to critical thinking and argument, with readings</i> (8th ed.). Boston: Bedford/St. Martin's.	1260
Barnet, S., Burto, W., and Cain, W. (2007). <i>Literature for composition</i> (8th ed.). New York: Pearson/Longman.	1100
Beebe, S., Beebe, S., and Ivy, D. (2010). <i>Communication: principles for a lifetime</i> (4th ed.). Boston: Allyn & Bacon.	1190
Berko, R., Wolvin, A., and Wolvin, D. (2007). <i>Communicating: a social and career focus</i> (10th ed.). Boston: Houghton Mifflin.	1200
Blanchard, K., and Root, C. (2007). <i>Writing preparation and practice: book 3</i> . New York: Pearson Longman.	970
Carson, R. (1998). <i>Lost worlds: the discovered writing of Rachel Carson</i> . Boston: Beacon Press.	1300
Cohen, H. (2005). <i>The naked roommate and 107 other issues you might run into in college</i> (3rd ed.). Naperville, IL: Sourcebooks.	960
Coopman, S., and Lull, J. (2009). <i>Public speaking: the evolving art</i> . Boston: Wadsworth/Cengage.	1190
Crowley, M., and Stancliff, M. (2008). <i>Critical situations: a rhetoric for writing in communities</i> . New York: Pearson/Longman.	1240

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TABLE D2 (CONTINUED)

**Lexile measures for textbooks required by entry-level English courses at University of Texas system schools, fall 2009**

Textbook	Lexile measure
Dingle, K., and Lebedev, J. (2008). <i>Vocabulary power 2</i> . White Plains, NY: Pearson Education.	*
Ditiberio, J., and Hammer, A. (1993). <i>Introduction to type in college</i> . Palo Alto, CA: Consulting Psychologists Press.	1100
DiYanni, R. (2008). <i>Literature: approaches to fiction, poetry, and drama</i> (2nd ed.). Boston: McGraw-Hill.	1120
Dobkin, B. (2003). <i>Communication in a changing world</i> . Boston: McGraw-Hill.	1190
Dodd, C. (2008). <i>Managing business and professional communication</i> (2nd ed.). New York: Pearson.	1160
Dollahite, N., and Haun, J. (2006). <i>Sourcework: academic writing from sources</i> . Boston: Houghton Mifflin.	1150
Downing, S. (2008). <i>On course</i> (5th ed.). Boston: Houghton Mifflin.	1020
Easton, T. (2009). <i>Environmental issues: taking sides—clashing views on environmental issues</i> (13th ed.). Boston: McGraw-Hill Higher Education.	1450
Eckstut, S. (2006). <i>Focus on grammar 1: an integrated skills approach</i> (book 1) (2nd ed.). White Plains, NY: Longman.	*
Ewing, J., and Quinn, D. (2005). <i>Monkeys are made of chocolate</i> . Masonville, CO: PixyJack Press.	1170
Faigley, L. (2009). <i>The little Penguin handbook</i> (2nd ed.). New York: Pearson/Longman.	1070
Faigley, L., and Selzer, J. (2009). <i>Good reasons with contemporary arguments: reading, designing, and writing effective arguments</i> (4th ed.). New York: Pearson Longman.	1290
Fitzpatrick, M. (2005). <i>Engaging writing</i> . New York: Pearson/Longman.	1110
Fowler, H., and Aaron, J. (2010). <i>The Little, Brown handbook</i> (11th ed.). New York: Pearson/Longman.	1130
Fuchs, M. (2006). <i>Focus on grammar 3: an integrated skills approach (full workbook)</i> (3rd ed.). New York: Pearson Longman.	*
Fuchs, M., and Bonner, M. (2006). <i>Focus on grammar 4: an integrated skills approach (full student book with student audio CD)</i> (3rd ed.). New York: Longman.	*
Fuchs, M., Bonner, M., and Curtis, J. (2006). <i>Focus on grammar 4: an integrated skills approach (workbook)</i> (3rd ed.). New York: Longman.	*
Fuchs, M., Bonner, M., and Westheimer, M. (2006). <i>Focus on grammar 3: an integrated skills approach</i> (3rd ed.). New York: Pearson/Longman.	*
Glenn, C., and Gray, L. (2010). <i>The Hodges Harbrace handbook, 2009 MLA update edition</i> (17th ed.). Boston: Wadsworth/Cengage.	1030
Glenn, C., and Gray, L. (2010). <i>The writer's Harbrace handbook, 2009 MLA update edition</i> (4th ed.). Boston: Wadsworth/Cengage.	1180
Goshgarian, G., and Krueger, K. (2009). <i>Dialogues: an argument rhetoric and reader</i> (6th ed.). New York: Pearson/Longman.	1270
Hacker, D. (2006). <i>The Bedford handbook</i> (7th ed.). Boston: Bedford/St. Martin's.	1090
Hacker, D. (2007). <i>A writer's reference with extra help for ESL writers</i> (6th ed.). Boston: Bedford/St. Martin's.	1110
Hacker, D. (2008). <i>A pocket style manual</i> (5th ed.). Boston: Bedford/St. Martin's.	1090
Hacker, D., and Sommers, N. (2010). <i>The Bedford handbook</i> (8th ed.). Boston: Bedford/St. Martin's.	1100
Hamilton, C. (2008). <i>Communicating for results: a guide for business and the professions</i> (8th ed.). Boston: Thomson Wadsworth.	1220
Hogue, A. (2008). <i>First steps in academic writing</i> (2nd ed.). New York: Pearson/Longman.	780
Jacobus, L. (2010). <i>A world of ideas: essential readings for college writers</i> (8th ed.). Boston: Bedford/St. Martin's.	1300

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TABLE D2 (CONTINUED)

**Lexile measures for textbooks required by entry-level English courses at University of Texas system schools, fall 2009**

Textbook	Lexile measure
Kirszner, L., and Mandell, S. (2004). <i>Patterns for college writing: a rhetorical reader and guide</i> (11th ed.). New York: Bedford/St. Martin's.	1180
Kirszner, L., and Mandell, S. (2008). <i>The Blair reader: exploring contemporary issues</i> (6th ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.	1220
Lamott, A. (1994). <i>Bird by bird: some instructions on writing and life</i> . New York: Anchor Books.	1130
Lipson, C. (2006). <i>Cite right: a quick guide to citation styles—MLA, APA, Chicago, the sciences, professions, and more</i> . Chicago: University of Chicago Press.	960
Lucas, S. (2009). <i>The art of public speaking</i> (10th ed.). Boston: McGraw-Hill Higher Education.	1120
Lucas, S. (2009). <i>The art of public speaking</i> (10th ed.) (Custom for UT El Paso). Boston: McGraw-Hill Higher Education.	1120
Lucas, S. (2009). <i>The art of public speaking</i> (10th ed.) (Custom for UT Pan American). Boston: McGraw-Hill Higher Education.	1120
Lunsford, A. (2008). <i>St. Martin's Handbook</i> (6th ed.). Boston: Bedford/St. Martin's.	1130
Lunsford, A. (2009). <i>EasyWriter: a pocket reference</i> (3rd ed.). New York: Bedford/St. Martin's.	1110
Lunsford, A., and Walters, K. (2007). <i>Everything's an argument, with readings</i> (4th ed.). Boston: Bedford/St. Martin's.	1290
Lunsford, R., and Bridges, B. (2008). <i>Longwood guide to writing</i> (4th ed.). New York: Pearson/Longman.	1180
McCarthy, C. (2008). <i>The road</i> (6th ed.). New York: Random House.	670
McKibben, B. (2007). <i>Deep economy: the wealth of communities and the durable future</i> . New York: Henry Holt and Company.	1270
McMahan, E., Day, S., and Funk, R. (2007). <i>Literature and the writing process</i> (8th ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.	980
Milan, S. (2000). <i>Public speaking</i> (1st ed.). Boca Raton, FL: BarCharts Inc.	*
Modern Language Association of America. (2009). <i>MLA handbook for writers of research papers</i> (7th ed.). New York: Author.	1290
Molinsky, S., and Bliss, B. (2005). <i>Word by word picture dictionary</i> (2nd ed.). New York: Longman.	*
Muller, G. (2008). <i>The McGraw-Hill reader: issues across the disciplines</i> (10th ed.). New York: McGraw-Hill Higher Education.	1270
O'Hair, D., Rubenstein, H., Stewart, R., and Weimann, M. (2007). <i>Pocket guide to public speaking</i> (2nd ed.). Boston: Bedford/St. Martin's.	1140
O'Hair, D., and Weimann, M. (2004). <i>Essential guide to interpersonal communication</i> . Boston: Bedford/St. Martin's.	1130
Oshima, A., and Hogue, A. (2006). <i>Writing academic English</i> (4th ed.). White Plains, NY: Pearson/Longman.	1050
Pollan, M. (2009). <i>In defense of food: an eater's manifesto</i> . New York: Penguin.	1390
Ramage, J., Bean, J., and Johnson, J. (2007). <i>Writing arguments</i> (7th ed.). New York: Pearson/Longman.	1300
Reid, J. (2000). <i>Process of composition</i> (3rd ed.). New York: Pearson/Longman.	1030
Reid, S. (2008). <i>The Prentice Hall guide for college writers</i> (8th ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.	1150
Rieke, R. (2004). <i>Communication in the professions: a working text in communication studies</i> (2nd ed.). Boston: Pearson Custom Publishing.	1040
Rottenberg, A., and Winchell, D. (2009). <i>Elements of argument</i> (9th ed.). Boston: Bedford/St. Martin's.	1280
Sargent, E., and Paraskevas, C. (2005). <i>Conversations about writing: eavesdropping, inkshedding, and joining in</i> . Toronto, Canada: Nelson Thomson.	1260

(CONTINUED)



TABLE D2 (CONTINUED)

**Lexile measures for textbooks required by entry-level English courses at University of Texas system schools, fall 2009**

Textbook	Lexile measure
Schoenberg, I., and Maurer, J. (2006). <i>Focus on grammar: an integrated skills approach</i> (2nd ed.). White Plains, NY: Pearson/Longman.	*
Sebranek, P., Meyer, V., Kemper, D., and Krenzke, C. (2007). <i>Write for college: a student handbook</i> . Wilmington, MA: Write Source, Great Source Education Group.	980
Sims, M. (2009). <i>The write stuff: thinking through essays</i> . Upper Saddle River, NJ: Pearson.	1150
Smith, L., and Mare, N. (2004a). <i>Themes for today</i> (2nd ed.). Boston: Heinle/Cengage.	700
Smith, L., and Mare, N. (2004b). <i>Issues for today</i> (3rd ed.). Boston: Heinle/Cengage.	820
Trimble, J. (2000). <i>Writing with style: conversations on the art of writing</i> (2nd ed.). Upper Saddle River, NJ: Prentice Hall.	1040
Troyka, L., and Hesse, D. (2009). <i>Simon &amp; Schuster handbook for writers</i> (9th ed.). New York: Pearson.	1110
The University of Texas at San Antonio. (2009–10). <i>Writing program student handbook</i> (1st ed.). San Antonio, TX: The University of Texas at San Antonio.	1090
VanderMey, R., Meyer, V., Rys, J., and Sebranek, P. (2009). <i>The college writer: a guide to thinking, writing, and researching, 2009 MLA update edition</i> (3rd ed.). Boston: Wadsworth/Cengage.	1010
Wilhoit, S. (2010). <i>A brief guide to writing from readings</i> (5th ed.). New York: Pearson/Longman.	1260
Wood, N. (2009). <i>Perspectives on argument</i> (6th ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.	1200
Wysocki, A., and Lynch, D. (2007). <i>Compose, design, advocate: a rhetoric for integrating written, visual, and oral communication</i> . New York: Pearson/Longman.	1280

\* Textbook had less than 50 percent prose, so a Lexile measure could not be assigned, and the textbook was not included in the study set of textbooks.

Source: MetaMetrics, Inc. analysis of books.

Web-based reading and other electronically provided reading and supplemental materials were not included in the analysis (some textbooks included CD-ROMs or other audio CDs). Thus, the Lexile measures for these textbooks do not reflect the difficulty of

content contained in these materials. Nine of the required textbooks had less than 50 percent prose and could not be assigned a Lexile measure. The findings from this study are based on analysis of the 74 textbooks appropriate for analysis.

### Appendix E. The University of Texas system schools

The current study and Wilkins et al. (2010) examined textbooks used in entry-level English courses at the nine University of Texas system schools. These schools differ in size, location, racial/ethnic composition, and range of SAT and ACT scores for first-year students (table E1).

TABLE E1

#### Characteristics of the nine University of Texas system schools, 2008/09 (percent, unless otherwise indicated)

Characteristic	Arlington	Austin	Brownsville	Dallas	El Paso	Pan American	Permian Basin	San Antonio	Tyler
<b>Enrollment</b>									
Total enrollment (number)	25,084	49,984	17,197	14,943	20,458	17,534	3,496	28,413	6,117
International enrollment	10.7	8.1	3.0	15.3	10.2	5.3	0.7	3.3	1.3
Admissions rate	76.2	43.5	100.0	53.7	99.0	85.1	90.5	88.0	80.0
<b>Gender (fall 2009)</b>									
Female	53.0	50.7	60.0	44.9	54.9	57.1	60.4	50.9	60.7
Male	47.0	49.3	40.0	55.1	45.1	42.9	39.6	49.1	39.3
<b>Race/ethnicity<sup>a</sup></b>									
Asian-American	11.9	17.0	0.4	21.3	1.3	1.4	1.4	6.6	2.3
Black	15.6	4.8	0.4	7.7	3.1	0.7	5.4	8.2	9.7
Hispanic	17.0	17.7	94.2	10.9	83.6	91.1	36.8	44.1	6.9
White	52.8	59.3	4.3	58.9	11.2	6.0	54.5	40.3	78.8
Other	2.7	1.2	0.6	1.3	0.7	0.7	1.9	0.8	2.2
<b>Test scores for middle 50 percent of first-year students</b>									
SAT composite <sup>b</sup>	950–1190	1100–1360	Not required	1080–1350	810–1030	830–1040	910–1100	920–1140	960–1170
ACT composite	20–25	24–30	Not required	24–30	16–21	17–21	19–23	19–24	20–25

a. For noninternational students only; universities do not report these data for the international student population.

b. SAT math and critical reading scores are reported as a composite value; writing scores, required by only four of the nine universities, were omitted.

Source: Authors' compilation based on data from College Board (2009); University of Texas at Arlington (2009); University of Texas at Austin (2009); University of Texas at Brownsville (2009); University of Texas at Dallas (2008); University of Texas at El Paso (2009); University of Texas–Pan American (2009); University of Texas of the Permian Basin (2009); University of Texas at San Antonio (2009); University of Texas System (2009); University of Texas at Tyler (2008).

## Appendix F. Data and methodology

This study applied the methodology developed and documented in the REL Southwest report, *How prepared are students for college-level reading? Applying a Lexile®-based approach* (Wilkins et al. 2010). The methodology uses Lexile measures to describe both the reading levels of students and the difficulty level of textbooks. It then links the information to describe how well the students are likely to be able to read and comprehend the textbooks. The student population included all grade 11 Texas public school students who took the April 2009 exit-level Texas Assessment of Knowledge and Skills for English language arts and reading (TAKS) or TAKS–Accommodated (table F1).<sup>21</sup> The textbook population included textbooks<sup>22</sup> used in entry-level English courses at University of Texas system schools.

### Data

To apply this methodology, data were obtained on both the students and the textbooks.

**Student data.** The methodology required a cumulative frequency distribution of Lexile measures for each student subgroup. All grade 11 public school students in Texas take one of the four versions of the exit-level TAKS (Texas Project First n.d.). The TAKS data in this study are from April 2009. The cumulative frequency distribution of TAKS and TAKS–Accommodated scores (for each TAKS scaled score, the number of students who scored at that level or lower) is publicly available (Texas Education Agency 2009c). These data were obtained separately for each subgroup through a formal request to the Texas Education Agency (Texas Education Agency n.d. b.). The TAKS scores were then converted to the corresponding Lexile measures using a TAKS–Lexile conversion table produced through a 2005 linking study that linked TAKS scores to corresponding Lexile measures (Texas Education Agency 2005).

**Textbook data.** Wilkins et al. (2010) obtained a list of the textbooks used in entry-level English courses at the nine University of Texas system schools, along with the Lexile measure and number of textbook-uses for each textbook.<sup>23</sup> These data were used to calculate a frequency distribution showing the number of textbook-uses for each Lexile measure.

### Linking procedure

A two-step linking procedure was applied to the student and textbook Lexile data to determine students' ability to read the textbooks at various proficiency levels. The first step was to determine the reading difficulty level of each textbook by examining the distribution of textbook-uses and determining the Lexile for each percentile in the distribution. The second step compares the distribution of student reading ability to the distribution of the textbook difficulty to determine the percentage of students who can read textbooks of different difficulty levels.

**Step 1. Determine the reading difficulty level (percentile) of each textbook.** This step yielded textbook Lexile measures corresponding to each percentile in the distribution of textbook-uses. Because this brief used the same textbook sample as Wilkins et al. (2010), step 1 had already been completed by that study.

Wilkins et al. used the following formula to calculate percentiles (Kirk 2008):

$$P_{\%} = X_{ll} + i \left( \frac{n(P_R / 100) - \sum f_b}{f_i} \right)$$

where  $P_{\%}$  is the selected percentile,  $X_{ll}$  is the real lower limit of the class interval containing the percentile of interest,  $i$  is the class interval size,  $n$  is the total number of scores in the distribution,  $P_R$  is the percentile rank of interest,  $\sum f_b$  is the number of scores below  $X_{ll}$ , and  $f_i$  is the number of scores in the class interval containing  $P_{\%}$ .

TABLE F1  
**Characteristics of Texas grade 11 students who took the April 2009 exit-level TAKS  
 or TAKS–Accommodated**

Characteristic	Percentage	Number
<b>Gender</b>		
Female	50.2	133,598
Male	49.7	132,212
<b>Race/ethnicity<sup>a</sup></b>		
American Indian	0.4	954
Asian	4.0	10,587
Black	13.9	36,864
Hispanic	41.1	109,167
White	40.7	108,184
<b>Economic status</b>		
Economically disadvantaged	41.8	111,270
Not economically disadvantaged	58.1	154,399
<b>At-risk status</b>		
At-risk	50.1	133,245
Not at-risk	49.8	132,446
<b>Limited English proficient status</b>		
Limited English proficient	4.5	11,998
Not limited English proficient	95.4	249,258
<b>English as a second language status</b>		
Receiving English as a second language services	4.1	10,980
Not receiving English as a second language services	95.8	254,708
<b>Gifted and talented education status</b>		
Receiving gifted and talented services	11.0	29,308
Not receiving gifted and talented services	88.9	236,367
<b>Career and technical education status</b>		
Enrolled in at least one career and technical education course	70.7	187,884
Not enrolled in career and technical education	29.3	77,803
<b>Special education status</b>		
Receiving special education services	5.7	15,043
Not receiving special education services	94.3	250,657
<b>TAKS version status</b>		
TAKS	96.5	256,702
TAKS–Accommodated	3.5	9,180

*Note:* Percentages may not sum to 100 percent because of rounding. Sample size is 265,895. In a small number of cases, demographic information was not available.

a. Black includes African American, Hispanic includes Latino, Asian includes Native Hawaiian or Other Pacific Islander, and American Indian includes Alaska Native.

*Source:* Authors' analysis based on Texas Education Agency (2009b).

The percentile,  $P_{\%}$ , is the score at or below which a certain percentage of scores in a distribution fall. This percentage is called the percentile rank,  $P_R$ . For example, for the 60th percentile, with a corresponding score of 485,  $P_{\%}$  would be 485 and  $P_R$  would be 60.

Because textbook Lexiles are in increments of 10, the real lower limit for a Lexile is 5 points below the Lexile. Thus, in the formula,  $X_{ll}$  is replaced with  $T - 5$ , where  $T$  is the lowest textbook Lexile with a relative cumulative frequency greater than or equal to the selected percentile rank. The class interval is  $T \pm 5$ , yielding a class interval size of 10. Thus, the value 10 is substituted for  $i$  in the formula:

$$P_{\%} = (T - 5) + 10 \left( \frac{n(P_R / 100) - \sum f_b}{f_i} \right)$$

where  $P_{\%}$  is the selected percentile of textbook reading difficulty (Lexile) in the distribution of textbook-uses,  $T$  is the lowest textbook Lexile measure whose relative cumulative frequency is greater than or equal to the selected percentile rank,  $n$  is the total number of textbook-uses,  $P_R$  is the percentile rank of interest of textbook reading difficulty (Lexile) in the distribution of textbook-uses,  $\sum f_b$  is the number of textbook-uses below  $T$ , and  $f_i$  is the number of textbook-uses for  $T$ .

The equation calculates the percentile by determining how far within the selected class interval the percentile is located. This can be seen by examining the last term in the equation, where the number of scores at or below the percentile of interest is  $n(P_R/100)$ . The number of scores below the interval containing the

percentile is  $\sum f_b$  (the number of scores below the lower limit of the interval). The denominator of the term ( $f_i$ ) is the number of scores in the interval.

If, for example, there are 500 scores and the percentile of interest is  $P_R = 10$ , the number of scores at or below the 10th percentile is  $500(10/100) = 50$ . If  $T = 320$  and 45 scores are below  $T$  ( $\sum f_b = 45$ ) and 20 scores were in the interval containing  $T$  ( $f_i = 20$ ),  $n(P_R / 100) - \sum f_b = 50 - 45 = 5$ , so  $P_{10}$  is 5 scores above the lower limit of the interval, which has 20 scores ( $P_{10}$  is  $5/20$ , or 0.25 of the way, into the interval). Multiplying this figure by the interval length and adding it to the lower limit of the interval yields the exact percentile. If  $T = 320$ , then

$$P_{10} = (320 - 5) + 10 \left( \frac{500(10 / 100) - 45}{20} \right) =$$

$$315 + 10 \left( \frac{50 - 45}{20} \right) = 315 + 10 \left( \frac{5}{20} \right) =$$

$$315 + 2.5 = 317.5,$$

so the actual percentile in this example is 317.5.

**Step 2. Calculate the percentage of students who can read textbooks at different difficulty levels.**

This step uses the cumulative relative frequency distribution of the student Lexile measures. For each textbook Lexile, this provides the percentage of students whose Lexile reading score was at that level or higher. This was used to determine the percentage of students able to read books that correspond to the textbook's percentile.

### Appendix G. Subgroup analysis following Wilkins et al. (2010)

The Wilkins et al. (2010) study reported the overall readiness level of Texas students in a different way than the current report. Instead of reporting the actual percentage of students in three separate categories (very well prepared, somewhat prepared, and not prepared), Wilkins et al. (2010) reported the cumulative percentage of students who could read at five different Lexile difficulty levels, representing the 5th, 25th, 50th, 75th, and 95th percentiles of textbook difficulty at University of Texas system schools.

This appendix reports the results for each subgroup in the study at the same five Lexile difficulty levels as in Wilkins et al. (2010; tables G1–G10). For comparison, overall student population results from Wilkins et al. (2010) are also included in each table.

Overall, 91 percent of Texas students were prepared to read at least 5 percent of

textbooks. This value (91 percent) includes all the students who are prepared to read at the 25th, 50th, 75th, and 95th textbook percentiles. Similarly, 80 percent of Texas students were prepared to read at least 50 percent of textbooks, a value that includes students ready to read at the 75th and 95th textbook percentiles.

An important general finding is that differences among student subgroups tend to increase at higher levels of textbook difficulty (see tables G1–G10). For example, table G7 reveals a 10 percentage point difference (90–100 percent) in readiness to read textbooks at the 5th percentile between students who receive gifted and talented education services and those who do not. This difference increases to 16 percentage points at the 25th textbook percentile, 21 percentage points at the 50th, 36 percentage points at the 75th, and 41 percentage points at the 95th.

TABLE G1

#### Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by race/ethnicity, 2008/09

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure					
			Overall ( <i>n</i> = 265,895)	American Indian ( <i>n</i> = 954)	Asian ( <i>n</i> = 10,587)	Black ( <i>n</i> = 36,864)	Hispanic ( <i>n</i> = 109,167)	White ( <i>n</i> = 108,184)
5	5th	1020	91	93	94	87	87	95
25	25th	1106	85	89	91	77	78	92
50	50th	1143	80	84	89	71	73	89
75	75th	1264	62	68	77	45	51	75
95	95th	1297	51	56	69	37	40	64

*Note:* Black includes African American, Hispanic includes Latino, Asian includes Native Hawaiian or Other Pacific Islander, and American Indian includes Alaska Native. Individual subgroup totals do not equal the overall total because status was unknown for some students.

*Source:* Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G2

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by gender, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall (n = 265,895)	Male (n = 132,212)	Female (n = 133,598)
5	5th	1020	91	89	92
25	25th	1106	85	82	86
50	50th	1143	80	77	82
75	75th	1264	62	58	65
95	95th	1297	51	46	55

Note: Individual subgroup values do not sum to the overall total because status was unknown for some students.

Source: Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G3

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by economically disadvantaged status, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall (n = 265,895)	Economically disadvantaged (n = 111,270)	Not economically disadvantaged (n = 154,399)
5	5th	1020	91	86	95
25	25th	1106	85	76	91
50	50th	1144	80	70	88
75	75th	1265	62	48	72
95	95th	1297	51	37	62

Note: Individual subgroup values do not sum to the overall total because status was unknown for some students.

Source: Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G4

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by at-risk status, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall (n = 265,895)	At-risk (n = 133,245)	Not at-risk (n = 132,446)
5	5th	1020	91	84	98
25	25th	1106	85	73	96
50	50th	1144	80	66	95
75	75th	1265	62	40	84
95	95th	1297	51	28	74

Note: Individual subgroup values do not sum to the overall total because status was unknown for some students.

Source: Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G5

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by limited English language proficient status, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall ( <i>n</i> = 265,895)	Limited English language proficient ( <i>n</i> = 11,998)	Not limited English language proficient ( <i>n</i> = 249,258)
5	5th	1020	91	44	94
25	25th	1106	85	28	88
50	50th	1144	80	21	84
75	75th	1265	62	8	65
95	95th	1297	51	5	54

Note: Individual subgroup values do not sum to the overall total because status was unknown for some students.

Source: Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G6

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by English as a Second Language (ESL) status, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall ( <i>n</i> = 265,895)	In an ESL program ( <i>n</i> = 10,980)	Not in an ESL program ( <i>n</i> = 254,708)
5	5th	1020	91	43	93
25	25th	1106	85	27	87
50	50th	1144	80	20	83
75	75th	1265	62	7	64
95	95th	1297	51	4	53

Note: Individual subgroup values do not sum to the overall total because status was unknown for some students.

Source: Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.



TABLE G7

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by gifted and talented education status, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall (n = 265,895)	Receiving gifted and talented education services (n = 29,308)	Not receiving gifted and talented education services (n = 236,367)
5	5th	1020	91	100	90
25	25th	1106	85	99	83
50	50th	1143	80	99	78
75	75th	1264	62	94	58
95	95th	1297	51	88	47

Note: Individual subgroup values do not sum to the overall total because status was unknown for some students.

Source: Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G8

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by career and technical education status, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall (n = 265,895)	Enrolled in at least one career and technical education course (n = 187,884)	Not enrolled in career and technical education (n = 77,803)
5	5th	1020	91	91	91
25	25th	1106	85	85	85
50	50th	1143	80	80	81
75	75th	1264	62	61	65
95	95th	1297	51	49	56

Note: Individual subgroup values do not sum to the overall total because status was unknown for some students.

Source: Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G9

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by special education status, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall ( <i>n</i> = 265,895)	Receiving special education services ( <i>n</i> = 15,043)	Not receiving special education services ( <i>n</i> = 250,657)
5	5th	1020	91	55	93
25	25th	1106	85	39	87
50	50th	1144	80	32	83
75	75th	1265	62	14	65
95	95th	1297	51	9	54

*Note:* Individual subgroup values do not sum to the overall total because status was unknown for some students.

*Source:* Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

TABLE G10

**Percentage of Texas grade 11 students prepared to read and comprehend specific percentages of textbooks, by TAKS version, 2008/09**

Prepared to read at least (percent of textbooks)	Percentile	Lexile measure	Percentage of students at or above Lexile measure		
			Overall ( <i>n</i> = 265,895)	Took the TAKS ( <i>n</i> = 256,702)	Took the TAKS–Accommodated ( <i>n</i> = 9,180)
5	5th	1020	91	93	41
25	25th	1106	85	87	25
50	50th	1144	80	82	18
75	75th	1265	62	64	6
95	95th	1297	51	53	3

*Note:* Individual subgroup values do not sum to the overall total because status was unknown for some students. TAKS = Texas Assessment of Knowledge and Skills

*Source:* Overall results, Wilkins et al. (2010); subgroup results, authors' analyses of data described in text.

### Appendix H. Texas Assessment of Knowledge and Skills scaled score–Lexile measure conversions from Wilkins et al. (2010)

A 2005 Texas Assessment of Knowledge and Skills (TAKS)–Lexile linking study (Texas Education Agency 2005) allowed TAKS scaled scores to be converted to Lexile scores for each of TAKS scaled scores observed in 2005. Because TAKS scores from 2005 are considered equivalent to TAKS scores in later years (Texas Education Agency 2008c), the conversion tables from the 2005 study could be applied to the 2009 TAKS data to determine the Lexile measure corresponding to each 2009 TAKS score (Texas Education Agency 2005).

However, the equating process from year to year can result in TAKS scaled scores that were not observed in 2005. Therefore whenever a TAKS scaled score appeared in the 2009 TAKS frequency distribution that had not appeared in the 2005 linking study, a corresponding Lexile measure had to be estimated. Linear interpolation was used to establish a Lexile measure for any TAKS score not included in the original 2005 conversion table. TAKS scaled scores observed in the 2009 TAKS frequency distribution and corresponding Lexile measures are provided in table H1. Lexile measures that had to be interpolated are shown in bold. This table is equivalent to table F6 in Wilkins et al. (2010).

TABLE H1

#### TAKS scaled score–Lexile measure conversions, including interpolated values

TAKS scaled score	Lexile measure	TAKS scaled score	Lexile measure
<b>1340</b>	<b>655</b>	<b>1813</b>	<b>655</b>
1364	655	1818	655
<b>1480</b>	<b>655</b>	1825	655
1504	655	1832	655
<b>1562</b>	<b>655</b>	<b>1837</b>	<b>655</b>
1587	655	1845	655
1637	655	<b>1848</b>	<b>655</b>
<b>1647</b>	<b>655</b>	1858	655
1674	655	<b>1869</b>	<b>655</b>
<b>1676</b>	<b>655</b>	1870	655
<b>1700</b>	<b>655</b>	<b>1879</b>	<b>663.18</b>
1703	655	1881	665
<b>1721</b>	<b>655</b>	<b>1888</b>	<b>674.55</b>
1728	655	1892	680
<b>1740</b>	<b>655</b>	<b>1898</b>	<b>690.91</b>
1750	655	1903	700
<b>1757</b>	<b>655</b>	<b>1907</b>	<b>706</b>
1769	655	1913	715
<b>1773</b>	<b>655</b>	<b>1916</b>	<b>720.45</b>
1787	655	1924	735
<b>1800</b>	<b>655</b>	<b>1925</b>	<b>736.50</b>
1803	655	1934	750

(CONTINUED)

TABLE H1 (CONTINUED)

**TAKS scaled score–Lexile measure conversions, including interpolated values**

TAKS scaled score	Lexile measure	TAKS scaled score	Lexile measure
<b>1942</b>	<b>763.33</b>	2116	1040
1943	765	<b>2124</b>	<b>1052</b>
<b>1951</b>	<b>777</b>	2126	1055
1953	780	<b>2134</b>	<b>1063.89</b>
<b>1959</b>	<b>790</b>	2135	1065
1962	795	<b>2144</b>	<b>1081.36</b>
<b>1968</b>	<b>805</b>	2146	1085
1971	810	<b>2155</b>	<b>1098.5</b>
<b>1976</b>	<b>817.5</b>	2156	1100
1981	825	2166	1120
<b>1985</b>	<b>831.67</b>	2177	1135
1990	840	2188	1150
<b>1993</b>	<b>845</b>	<b>2189</b>	<b>1151.67</b>
1999	855	2200	1170
<b>2001</b>	<b>857.5</b>	<b>2202</b>	<b>1173.33</b>
2007	865	2212	1190
<b>2009</b>	<b>868.33</b>	<b>2215</b>	<b>1195</b>
2016	880	2224	1210
<b>2018</b>	<b>883.33</b>	<b>2229</b>	<b>1217.69</b>
2025	895	2237	1230
<b>2026</b>	<b>896.11</b>	<b>2244</b>	<b>1240.77</b>
2034	905	2250	1250
2045	925	<b>2261</b>	<b>1265.71</b>
<b>2051</b>	<b>933.57</b>	2264	1270
2052	935	<b>2278</b>	<b>1293.33</b>
<b>2060</b>	<b>948.33</b>	2279	1295
2061	950	2294	1320
<b>2071</b>	<b>968.18</b>	<b>2298</b>	<b>1325.88</b>
2072	970	2311	1345
<b>2077</b>	<b>977.14</b>	<b>2319</b>	<b>1359.12</b>
2079	980	2328	1375
<b>2086</b>	<b>991.67</b>	<b>2344</b>	<b>1397.22</b>
2088	995	2346	1400
<b>2099</b>	<b>1013.33</b>	2366	1435
2100	1015	2400	1490
<b>2104</b>	<b>1018.33</b>	<b>2403</b>	<b>1492.73</b>
2106	1020	2411	1500
<b>2114</b>	<b>1036</b>	2436	1500

(CONTINUED)

TABLE H1 (CONTINUED)

**TAKS scaled score–Lexile measure conversions, including interpolated values**

TAKS scaled score	Lexile measure	TAKS scaled score	Lexile measure
<b>2441</b>	<b>1500</b>	<b>2687</b>	<b>1500</b>
2464	1500	2749	1500
<b>2485</b>	<b>1500</b>	<b>2807</b>	<b>1500</b>
2495	1500	2839	1500
2530	1500	<b>2956</b>	<b>1500</b>
<b>2538</b>	<b>1500</b>	2960	1500
2570	1500	3122	1500
<b>2603</b>	<b>1500</b>	<b>3128</b>	<b>1500</b>
2618	1500	<b>3325</b>	<b>1500</b>
2676	1500		

*Note:* Numbers in bold are interpolated values.

*Source:* Wilkins et al. 2010, table F6.

**Notes**

1. Data from the 2009 Texas Assessment of Knowledge and Skills (TAKS) were used for this study. The TAKS, which is administered to all students in grades 3–8 and grade 11, measures student skills in four major content areas and is used for state and federal accountability reporting.
2. Students are considered at-risk if they meet one or more of 13 at-risk criteria, such as having not been promoted to the next grade, been expelled during the previous or current school year, or being homeless. See appendix C in the main report for the complete list of at-risk criteria.
3. Enrollment in one or more career and technical education courses.
4. The TAKS–Accommodated is a version of the TAKS that provides accommodations such as large print for visually impaired students. Scores on the TAKS–Accommodated are considered equivalent to those on the regular TAKS.
5. Beginning in 2013/14, in addition to students meeting satisfactory standards on the state assessments and graduation rates, schools in Texas will have to meet specific targets for student subgroups, demonstrating competency on college readiness standards based on the new state assessment, the State of Texas Assessments of Academic Readiness (81st Texas Legislature 2009).
6. The Lexile® Framework for Reading matches readers with texts of the appropriate level of difficulty. Developed by MetaMetrics, Inc. (White and Clement 2001), the framework is a linguistic theory–based method for measuring the reading difficulty of prose texts and the reading capacity of students. The Lexile scale ranges from 0L (for emerging readers and beginning texts) to 1700L (for advanced readers and texts). Additional information about the Lexile® Framework is provided in appendix A.
7. The state assessment used in the Wilkins et al. (2010) study was the TAKS assessment, which is described in more detail in appendix B.
8. Although data from the 2010 TAKS administration are now available, the current study used the 2009 TAKS scores because they aligned with the textbook sample (textbooks used in the fall of 2009) collected and analyzed for Wilkins et al. (2010). Using this dataset allowed the subgroup results in this brief to be compared with the Wilkins et al. (2010) results. Wilkins et al. (2010) collected the most recent data available at that time for both textbooks (fall 2009) and grade 11 TAKS scores (spring 2009). By the time some of these grade 11 students are in their first year of college, their reading comprehension will likely have improved and some textbooks they encounter might differ from those sampled here.
9. The average difficulty of words in a passage is estimated from each word’s frequency of appearance in a large MetaMetrics database of thousands of scanned books. The less frequent a word, the more difficult it is anticipated to be.
10. The first step in identifying the appropriate textbook population was to determine the entry-level English courses at each university. Texas uses a common course numbering system to ensure that courses are comparable, so students can transfer credits from one Texas institution to another (Texas Common Course Numbering System n.d.). This system was used in consultation with the Texas Higher Education Coordinating Board to identify the applicable courses. The entry-level courses from which the textbook sample was drawn are primarily English composition, speaking, and communication courses (see table D1 in appendix D), not English literature courses. These general

- language skills are likely to be important for success in most academic disciplines and careers.
11. According to MetaMetrics, Inc. (2011), nonprose material is typically represented by incomplete sentences or nonstandard text and includes content such as poetry, tables and graphs, headings, footnotes, and similar text. Such content can yield Lexile estimates that are not appropriate for the textbook.
  12. The Texas Education Agency considers 1170L as the college ready level (Williamson 2006).
  13. The frequency distribution indicates how many students were at each Lexile level, and the corresponding cumulative frequency distribution shows how many students were at a specific Lexile measure or below.
  14. The labels for the three levels of preparedness are not research based and were selected only for ease of exposition.
  15. TAKS–Accommodated is available to students receiving special education services and instruction at or near grade level (Texas Project First n.d.). It features format changes, such as a larger font and fewer items per page, and does not include field test questions (Texas Education Agency 2008a). These adaptations result in scaled scores that are interpreted in the same way as regular TAKS scores.
  16. Although the TAKS-ELAR was the source of student Lexile levels for this report, a district or school could use another source of student Lexile levels for a similar comparison.
  17. Reclassified English language learner students are students who, based on an assessment, are determined to be English language proficient and therefore no longer need English language learner services. However, the assessment does not always include academic English and, as a result, reclassified students might still struggle academically.
  18. At least one commercially available reading assessment (Scholastic, Inc. 2009) provides Lexile measures.
  19. The Texas Education Agency requires local education agencies to compare the TAKS passing rates of former limited English proficient students one year after exiting for each subject area with the statewide passing percentage for all students tested (Texas Education Agency 2008b).
  20. There are four versions of the TAKS. The TAKS–Accommodated provides accommodation—such as large print for visually impaired students—but the scores are considered equivalent to scores from the regular TAKS. For this reason, results from TAKS and TAKS–Accommodated are combined for state and federal accountability reporting (Texas Education Agency 2008a). TAKS–Modified and TAKS–Alternate have test modifications that do not provide equivalent scores or Lexile measures; they are not included in this study. In 2009, there were 302,959 grade 11 public school students in Texas (Texas Education Agency 2009a); 265,895 took either the TAKS or TAKS–Accommodated (Texas Education Agency 2009b).
  21. The data could have been collected by obtaining information on the entire population of students and textbooks of interest or by randomly sampling from one or both of the populations. The approach in this study is referred to as “no sampling,” because Lexiles were available for all grade 11 public school students who took the April 2009 exit-level TAKS or TAKS–Accommodated and for required entry-level college English textbooks in The University of Texas system.
  22. To be included in the study, the textbooks had to have at least 50 percent prose,

the amount necessary to obtain a Lexile measure.

23. Because some textbooks are used in multiple institutions and courses and sections have varying numbers of students, textbooks need to be weighted by the number of students assigned each book to determine which books students would be most likely to encounter. Thus, a textbook-use is defined as one student reading one textbook in one selected college course.

In the final set of textbooks, the weight applied to a textbook equals its number of textbook-uses. Weighting ensures that the textbooks used by more students have an appropriately larger impact on calculation of the reading level required to comprehend relevant textbooks and that undue weight is not given to books that are rarely used (books that students would have a very small probability of ever encountering).



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