Inside Text Complexity: Its Role in Meeting the Common Core State Standards

Elfrieda H. Hiebert, TextProject & University of California, Santa Cruz
This is the true story of Pierre, a small penguin in a big museum. It is also about the people at the California Academy of Sciences who worked together to help him through a hard time.
John’s mother took his hand. They left their house in the Penny Lane district of Liverpool, England, to go to his new home with Aunt Mimi and Uncle George.

His father, a merchant marine, was away at sea. His mother, feeling trapped, didn’t want to take care of him. John was only five years old.

Mama don’t go, Daddy come home.
Mama don’t go, Daddy come home.
It was the winter of 1941. The valiant battleship HMS *Duke of York* struggled against the screaming winds and forty-foot waves of a mighty December gale. On board, Winston S. Churchill, prime minister of Great Britain, calmly chomped his ever-present cigar as he strolled the pitching decks. He was going to meet the president of the United States. He was going to spend Christmas at the White House. He would not be stopped by a mere storm. He would not be stopped by a hurricane.
By the time they complete high school, students must be able to read and comprehend independently and proficiently the kinds of complex texts commonly found in college and careers.
Two Guidelines on Text Complexity for Educational Leaders

1. Know about the uses (and misuses) of the three systems of text complexity to lead teachers in informed instruction

2. Communicate research-based understandings of students’ capabilities in relation to new assessments
1. Know about the uses (and misuses) of the three systems of text complexity to lead teachers in informed instruction
1. **Quantitative measures** – readability and other scores of text complexity often best measured by computer software.

2. **Qualitative measures** – levels of meaning, structure, language conventionality and clarity, and knowledge demands often best measured by an attentive human reader.

3. **Reader and Task considerations** – background knowledge of reader, motivation, interests, and complexity generated by tasks often best determined by educators employing their professional judgment.
### The CCSS Staircase of Text Complexity

<table>
<thead>
<tr>
<th>Text Complexity Grade Band in the Standards</th>
<th>Old Lexile Ranges</th>
<th>Lexile Ranges Aligned to CCR Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-1</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>2-3</td>
<td>450</td>
<td>725</td>
</tr>
<tr>
<td></td>
<td>450</td>
<td>790</td>
</tr>
<tr>
<td>4-5</td>
<td>645</td>
<td>845</td>
</tr>
<tr>
<td></td>
<td>770</td>
<td>980</td>
</tr>
<tr>
<td>6-8</td>
<td>860</td>
<td>1010</td>
</tr>
<tr>
<td></td>
<td>955</td>
<td>1155</td>
</tr>
<tr>
<td>9-10</td>
<td>960</td>
<td>1115</td>
</tr>
<tr>
<td></td>
<td>1080</td>
<td>1305</td>
</tr>
<tr>
<td>11-CCR</td>
<td>1070</td>
<td>1220</td>
</tr>
<tr>
<td></td>
<td>1215</td>
<td>1355</td>
</tr>
</tbody>
</table>

The Mole had been working very hard all the morning, spring cleaning his little home. First with brooms, then with dusters; then on ladders and steps and chairs, with a brush and a pail of whitewash; till he had dust in his throat and eyes, and splashes of whitewash all over his black fur, and an aching back and weary arms.
Wind in the Willows: Form B

The Mole had been working very hard all the morning. He was spring cleaning his little home. First he used brooms, then with and dusters;

then he got on ladders and steps and chairs, with a brush and a pail of whitewash; till soon he had dust in his throat and eyes, and He had splashes of whitewash all over his black fur, and He had an aching back and weary arms.
## Wind in the Willows

<table>
<thead>
<tr>
<th></th>
<th>Form A</th>
<th>Form B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sentence Length (Average)</td>
<td>22.5</td>
<td>7.13</td>
</tr>
<tr>
<td>Word Frequency (Average)</td>
<td>3.71</td>
<td>3.70</td>
</tr>
<tr>
<td>Lexile</td>
<td>1200</td>
<td>360</td>
</tr>
<tr>
<td>Position on Text Complexity Staircase</td>
<td><strong>End of Grade 10</strong></td>
<td><strong>3rd Trimester of Grade 1</strong></td>
</tr>
</tbody>
</table>
Discrepancy in High School & College Texts (2010)

Sourced from:
- Workplace
- Community College
- Online Reference Articles
- Online Worldwide Newspapers
- University
- Graduate Record Exam


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<table>
<thead>
<tr>
<th><strong>Advantages</strong></th>
<th><strong>Disadvantages/Questions</strong></th>
</tr>
</thead>
</table>
| • “Omnibus” quantitative information is useful in sorting large groups of texts.  
• Specific quantitative information on a text can provide glimpses into potential instructional foci. | • Omnibus quantitative systems provide little, if any, insight into what needs to be taught or learned.  
• The staircase of text complexity in Appendix A is based on projections, not on empirical data. |
## Best Case Scenario

<table>
<thead>
<tr>
<th>Step</th>
<th>The Treasure</th>
<th>Tops and Bottoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quantitative Indices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lexile</td>
<td>650</td>
<td>580</td>
</tr>
<tr>
<td>Average Sentence Length (Lexile)</td>
<td>11.9</td>
<td>9.2</td>
</tr>
<tr>
<td>Average Word Frequency (Lexile)</td>
<td>3.92</td>
<td>3.56</td>
</tr>
<tr>
<td>Vocabulary Load (based on end-of-grade-2 demands)</td>
<td>7.8 words per 100</td>
<td>3.3 words per 100</td>
</tr>
<tr>
<td>Length</td>
<td>370 words</td>
<td>776 words</td>
</tr>
</tbody>
</table>

Figure 2: Qualitative Dimensions of Text Complexity

Levels of Meaning (literary texts) or Purpose (informational texts)
- Single level of meaning → Multiple levels of meaning
- Explicitly stated purpose → Implicit purpose, may be hidden or obscure

Structure
- Simple → Complex
- Explicit → Implicit
- Conventional → Unconventional (chiefly literary texts)
- Events related in chronological order → Events related out of chronological order (chiefly literary texts)
- Traits of a common genre or subgenre → Traits specific to a particular discipline (chiefly informational texts)
- Simple graphics → Sophisticated graphics
- Graphics unnecessary or merely supplementary to understanding the text → Graphics essential to understanding the text and may provide information not otherwise conveyed in the text

Language Conventionality and Clarity
- Literal → Figurative or ironic
- Clear → Ambiguous or purposefully misleading
- Contemporary, familiar → Archaic or otherwise unfamiliar
- Conversational → General academic and domain-specific

Knowledge Demands: Life Experiences (literary texts)
- Simple theme → Complex or sophisticated themes
- Single themes → Multiple themes
- Common, everyday experiences or clearly fantastical situations → Experiences distinctly different from one’s own
- Single perspective → Multiple perspectives
- Perspective(s) like one’s own → Perspective(s) unlike or in opposition to one’s own

Knowledge Demands: Cultural/Literary Knowledge (chiefly literary texts)
- Everyday knowledge and familiarity with genre conventions required → Cultural and literary knowledge useful
- Low intertextuality (few if any references/allusions to other texts) → High intertextuality (many references/allusions to other texts)

Knowledge Demands: Content/Discipline Knowledge (chiefly informational texts)
- Everyday knowledge and familiarity with genre conventions required → Extensive, perhaps specialized discipline-specific content knowledge required
- Low intertextuality (few if any references to/citations of other texts) → High intertextuality (many references to/citations of other texts)
### Advantages

- Looking at specific features of texts from the perspective of a group of students can uncover valuable insight into the elements of texts that require instruction and focus.

### Disadvantages/Questions

- These analyses are frequently “outsourced,” leaving teachers with little specific information about the critical features of texts.
- These outsourced evaluations have often produced omnibus evaluations (e.g., “complex,” “simple”), leading to the expectation that texts are uniform on different features.
## Best Case Scenario

<table>
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<tr>
<th>Step</th>
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<th>Tops and Bottoms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2. Qualitative Dimensions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Levels of Meaning</td>
<td>This parable has 2 levels of meaning: man going on a trip and a universal truth. <em>(complex)</em></td>
<td>Planting a garden is the context for a trickster tale. <em>(complex)</em></td>
</tr>
<tr>
<td>Knowledge demands—content, cultural, literary</td>
<td>Context is a “time long ago” with a palace and guards <em>(relatively simple)</em></td>
<td>Trickster tale may be new to 2nd graders; helpful to know about edible parts of vegetables <em>(complex)</em></td>
</tr>
<tr>
<td>Language conventions &amp; clarity</td>
<td>Conventional language of old tales <em>(relatively simple)</em></td>
<td>Contemporary language with a traditional text structure <em>(relatively simple)</em></td>
</tr>
<tr>
<td>Structure</td>
<td>Clear structure of parable <em>(moderately complex)</em></td>
<td>Clear structure of trickster tale <em>(complex)</em></td>
</tr>
</tbody>
</table>
While the prior two elements of the model focus on the inherent complexity of text, variables specific to particular readers (such as motivation, knowledge, and experiences) and to particular tasks (such as purpose and the complexity of the task assigned and the questions posed) must also be considered when determining whether a text is appropriate for a given student.

Such assessments are best made by teachers employing their professional judgment, experience, and knowledge of their students and the subject. (CCSS Appendix A, page 4)
**Advantages**

- Differentiation for readers, tasks, and contexts is an essential part of instruction. The issue is not *if* this dimension is essential but *how* teachers can be guided.

<table>
<thead>
<tr>
<th>Disadvantages/Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guidance within the standards is vague as to adaptations by reader, task, and context. Detailed cases are needed of how tasks and contexts have been adapted as a function of reader features and with different texts.</td>
</tr>
</tbody>
</table>
## Best Case Scenario

<table>
<thead>
<tr>
<th>Proficiency Level</th>
<th>Independent</th>
<th>Partner</th>
<th>Teacher-Led Small Group</th>
<th>Teacher-Whole Class</th>
</tr>
</thead>
</table>
| **Advanced**      | *D1*: *Treasure* read with written assignment; *D2*-4: Six selections read from *Fables* with assignment to pick 2 favorites for partner and teacher-led group *D5*: Write fable | *D2*: *Tops* read with partner with assignment for oral presentation in teacher-led group *D5*: Partners read favorite *Fables* | *D3*: Teacher guides students in doing close readings of *Treasure* and *Tops*. *D4*: Teacher guides students in close readings of *Fables*  
*Over week*: Teacher meets with pairs of students to review vocabulary added to personalized dictionaries | *D1*: Read-aloud of *Squids will be squids*  
*D2*: Discussion of elements of fables  
*D3*: Read-aloud of *Monkey: A Trickster Tale of India*  
*D4*: Discussion of elements of trickster tales  
*D5*: Short lesson on writing fables |
| **Proficient**    | *D1*: Read *Treasure* with written assignment  
*D2*-4: Read 1 *Mouse Tale* daily  
*D5*: Write fable | *D3*: Read *Tops* with partner  
*D5*: Partners read favorite *Mouse Tale* to one another | *D2*: Teacher guides students through close reading of *Treasure*  
*D4*: Teacher guides students through close reading of *Tops*  
*Over week*: Teacher meets with pairs of students to review vocabulary added to personalized dictionaries |

<table>
<thead>
<tr>
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<th>Partner</th>
<th>Teacher-Led Small Group</th>
<th>Teacher-Whole Class</th>
</tr>
</thead>
</table>
| Basic            | *D1-4*: Daily read a fable: *City Mouse & Country Mouse & the boy who cried wolf*  
*D5*: Write fable | *D2*: Read 1st half of *Tops*  
*D4*: Reread *Treasure* | *D1*: Scaffolded, close reading of 1st half of *Tops*  
*D2*: Scaffolded, close reading of 2nd half of *Tops*  
*D3*: Scaffolded, close reading of *Treasure*  
*D4*: Teacher meets with group to review vocabulary added to personalized dictionaries | *D1*: Read-aloud of *Squids will be squids*  
*D2*: Discussion of elements of fables  
*D3*: Read-aloud of *The Monkey*  
*D4*: Discussion of elements of trickster tales  
*D5*: Short lesson on writing fables |
| Below-Basic      | *D1 & 3*: Reread the text from teacher-led group with written assignment  
*D5*: Write fable | *D2 & 4*: Reread text from teacher-led group with written assignment | *D1*: Scaffolded, close reading of *The Boy who cried Wolf*  
*D2*: Scaffolded, close reading of *Belling the Cat*  
*D3*: Scaffolded, close reading of *The Lion & the Mouse*  
*D4*: Scaffolded, close reading of *City Mouse, Country Mouse* |
2. Communicate research-based understandings of students’ capabilities in relation to new assessments
Distribution of Words in Written English

(Zeno et al., 1995)

% of 17.25 million words

- 6 = 135,473
- 5 = 13,882
- 4 = 2980
- 3 = 1676
- 2 = 620
- 1 = 203
- 0 = 107

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Example of a Word Family

Help

- helping
- helpful
- helps
- helpers
- helped
- helper
Core Vocabulary consists of 4,000 simple word families

10% Unique
### “Authentic Text”: Common Core Exemplars

<table>
<thead>
<tr>
<th>Grade</th>
<th>Narrative</th>
<th>Informational</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3</td>
<td>.93</td>
<td>.92</td>
</tr>
<tr>
<td>4-5</td>
<td>.92</td>
<td>.91</td>
</tr>
<tr>
<td>6-8</td>
<td>.93</td>
<td>.87</td>
</tr>
<tr>
<td>9-10</td>
<td>.89</td>
<td>.91</td>
</tr>
<tr>
<td>11-CCR</td>
<td>.89</td>
<td>.87</td>
</tr>
</tbody>
</table>
I read a story about people who met because of a message inside a bottle. A man put the message inside the bottle and tossed it in the ocean.

Two hundred years ago when Maria Mitchell was born, most girls did not get a formal education. Instead, they learned how to cook, sew, and run a house.

On the day of the race, Lamont awoke early and checked all the equipment on his bicycle one final time. He had owned several bikes over the years.

<table>
<thead>
<tr>
<th>Text level</th>
<th>Core Vocabulary</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>97%</td>
</tr>
<tr>
<td>4.3</td>
<td>96%</td>
</tr>
<tr>
<td>6.3</td>
<td>92%</td>
</tr>
</tbody>
</table>
Once upon a time a woman was frying some pancakes. As she turned a cake in the pan, she said to her little boy, “If you were a little older, I would send you to the sawmill with some of these cakes for your father's dinner. But as it is, he must wait till supper for them.” “Oh, do let me take them,” said the boy, whose name was Karl. “Do let me go.” And he begged and begged, till at last his mother selected the brownest and crispest pancakes. She put them on a plate with a napkin over them and bade her son take them to the mill.


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How are students doing with the core vocabulary?

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentile group</th>
<th>#words read</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>72</td>
</tr>
<tr>
<td></td>
<td>50&lt;sup&gt;th&lt;/sup&gt;</td>
<td>95</td>
</tr>
<tr>
<td>4.3</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>50&lt;sup&gt;th&lt;/sup&gt;</td>
<td>122</td>
</tr>
<tr>
<td>6.3</td>
<td>25&lt;sup&gt;th&lt;/sup&gt;</td>
<td>119</td>
</tr>
<tr>
<td></td>
<td>50&lt;sup&gt;th&lt;/sup&gt;</td>
<td>142</td>
</tr>
</tbody>
</table>
Distributions of Word Zones: Smarter Balanced Sample Items

- G3-5
- G6-8
- HS

Legend:
- WZ6-8
- WZ4-5
- WZ1-3

Source: Elfrieda H. Hiebert www.textproject.org
I went back into my grandma’s room and wrapped the ball back up in paper, just like I’d found it. Except now it looked dirty and used, like a good baseball should.

On her 16th birthday, Kelly set a world record. She became the youngest African American female to fly four different fixed-wing aircraft in one day. Naturally, that inspired Kimberly to brainstorm ways to top her sister's achievement.

Diamonds are so common throughout the universe because they are a pure form of one of the universe’s most common elements: carbon. Diamonds have a number of amazing properties: they are extremely hard and transparent, and can withstand radioactivity, corrosive acids, and other powerful forces.
TextProject aims to bring beginning and struggling readers to high levels of literacy through a variety of strategies and tools, particularly the texts used for reading instruction.

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SummerReads is TextProject's new summer reading program, based on the Text model, that helps at-risk readers avoid the summer slump.

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