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Meaningful classroom learning: Grounded in the Learning Sciences and the Science of Reading

Contents

Introduction

Literacy skills and content knowledge share a reciprocal relationship that drives learning. Learning is a process of integrating new information into existing knowledge from long-term memory, so a rich foundation of content knowledge facilitates the acquisition of new knowledge (Kirschner et al., 2006). Similarly, reading comprehension results from the skillful and strategic integration of the reader's linguistic and content knowledge with text information to make sense of the text (Kintsch, 1988, 2012). By third grade, text becomes a main source of information for learning in school, rendering it essential that students continue developing their literacy skills and building their base of content knowledge to engage with increasingly complex academic texts and concepts.

Results of national exams reveal that most students in the U.S. struggle with literacy and lack content knowledge (U.S. Department of Education et al., 2019a, 2019b, 2022a, 2022b, 2022c). As shown in Figure 1, over two-thirds of students across grade levels struggle with reading, performing at a Basic or Below Basic level, and just as many or more struggle with math, science, and social studies.

National Assessment of Educational Progress Subject Area	Percentage of students performing at a Basic or Below Basic Level		
	4th grade	8th grade	12th grade
Reading	66%	69%	66%
Math	64%	73%	75%
Civics	n/a	79%	n/a
U.S. History	n/a	86%	n/a
Science	65%	65%	78%

Figure 1: Results of the most recent administrations of the National Assessment of Academic Progress

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These results have consequences beyond primary and secondary school. Almost half of high school graduates report that they had gaps in their education, with many reporting inadequate preparation related to literacy skills and content knowledge, including "reading and understanding complex materials", "doing research", and "applying what I have learned to solve problems" (Achieve, 2014). Remediation rates among first-year college students are high: 68 percent of students at two-year colleges and 40 percent at four-year colleges take remedial classes, many of which are remedial English/reading classes (Chen, 2016).

The consequences of inadequate academic preparation carry over into the workplace as well. Employers consider written communication and critical thinking—both reliant on literacy skills and content knowledge—the two most important career readiness competencies, yet only 47 percent of employers feel that recent graduates are highly proficient in communication, and 55 percent feel they are highly proficient in critical thinking (National Association of Colleges and Employers, 2022).

A lack of high-quality curricular materials and research-based instructional approaches in K-12 education contributes to these outcomes. While core programs aim to provide materials that fully address the curricular standards for a grade and subject area, they are often unable provide in-depth coverage of every concept, incorrectly assuming that students have the content knowledge necessary for learning about complex topics and omitting important information. As a result, **teachers find themselves spending an average of 12 hours per week creating or searching for supplemental resources (Goldberg, 2016).**

Core programs may also lack diverse, relevant materials that provide a variety of perspectives, represent all students, and facilitate engagement and motivation to learn (Blumberg, 2008; Chick, 2006; Clark et al., 2004; Deckman et al., 2018; Guthrie et al., 2012; Woyshner & Schocker, 2015). Because both reading and learning rely on making connections to existing knowledge, it is essential that students have access to materials that both build on their lived experiences and expose them to new experiences and information. Diverse supplemental materials can fill this gap, broadening students' perspectives and fostering their sense of belonging (Bishop, 1990).

Further, students come to the classroom with unique sets of knowledge, skills, and experiences that are best met through differentiated instruction. Differentiation enables access to the grade-level curriculum for students who are struggling and provides an appropriate level of challenge for advanced students (Sousa & Tomlinson, 2018). Core programs typically lack differentiated materials, however, and **teachers report that finding differentiated materials is challenging, time-consuming, and often means that students in the same class are reading different texts rather than participating in whole-class instruction and experiencing grade-level content** (Whitley, et al., 2019; Valli & Buese, 2007).

Using supplemental materials and instructional approaches grounded in the science of reading and the learning sciences is an effective way to address these issues and support students' development of literacy skills and content knowledge. The science of reading and the learning sciences are interdisciplinary fields of study that rely on research from educational psychology, cognitive science,

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linguistics, computer science, instructional design, and other areas to understand how students learn to read and build knowledge (The Reading League, 2022; Sawyer, 2022). Through a research-based understanding of how students read and learn and what motivates them to do so, instructional designers can develop programs that give students the best chance of success in school and provide a solid foundation for success beyond school.

Research-Based Teaching and Learning with Newsela

Newsela is an adaptive instructional content platform that is grounded in the learning sciences and the science of reading to support meaningful classroom learning for students in grades 3-12. **Students who use Newsela develop essential literacy skills and foundational content knowledge for understanding grade-level lessons through reading high-interest, up-to-date content available at multiple reading levels.** Teachers can use Newsela content to provide explicit instruction and modeling in standards-based skills and create assignments that include scaffolds and activities to facilitate student practice. Newsela provides frequent opportunities for formative assessment that offer insights to guide targeted instructional decision-making and differentiation.

This paper describes the learning sciences and science of reading research base for Newsela and Newsela ELA content, instructional supports, and features. The Newsela sections review the research behind using leveled texts to support independent reading and scaffolded instruction; expanding content knowledge to facilitate further subject-area learning; using formative assessment to inform instruction and feedback; incorporating diverse perspectives into instructional materials to facilitate comprehension and engagement; and offering high-interest content and supports to cultivate motivation for reading and learning. The Newsela ELA section provides a deeper review of the science of reading and describes the research behind building vocabulary and background knowledge to support comprehension; developing active reading skills and metacognitive strategies for comprehension and learning; and using differentiated instructional approaches and supports to address student variability inclusively, in a whole-class setting. Readers are encouraged to approach this research compendium as a reference guide, using the table of contents to identify sections of interest that explore the research behind each aspect of Newsela in depth.

Newsela Products: Enhancing Content Learning for All Students Based on the Learning Sciences

Using Leveled Texts to Support Independent Reading and Scaffolded Instruction

Reading texts of appropriate complexity enables students to access grade-level curriculum and make progress in reading. **What constitutes "appropriate complexity" depends on the learning goal: texts that can be read independently with a high degree**

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of accuracy and comprehension reduce word-reading demands to promote fluency development and facilitate knowledge acquisition (Allington et al., 2015), while more challenging texts read with teacher or peer guidance enable students to expand their repertoire of comprehension skills and strategies (Shanahan, 2020).

Successful reading results from the strategic coordination of multiple skills for word recognition and language comprehension (Hoover & Gough, 1990; Scarborough, 2001). Research on human cognitive architecture shows that working memory, the part of the brain that processes incoming information, is limited in capacity (Sweller et al., 2011). When the cognitive load of reading the words, parsing the language, or understanding the ideas in a text is too great, working memory suffers. This is particularly true for students who are still developing reading fluency: decoding words consumes attention and working memory resources, while automatic word recognition enables students to focus on reading for meaning and learning from text (LaBerge & Samuels, 1974; Rasinski, 2006).

Beginning readers work on building oral reading fluency until they reach about 150 words per minute in middle school (Torgesen et al., 2007), and middle and high school students continue to develop fluency during silent reading by expanding the range of words they can recognize automatically (Hiebert et al., 2015). Engaging in wide, independent reading of texts with a high degree of accuracy improves both oral and silent reading fluency (Pikulski & Chard, 2005; Rasinski et al., 2015). Research with elementary, middle, and high school students shows that using technology to automatically adjust text level based on student comprehension data facilitates reading fluency and leads to improvements on high-stakes assessments of reading (Rasinski et al., 2015).

While reading at the independent level enhances fluency, comprehension, and learning from text, it does little to support growth in reading increasingly complex texts. Shanahan, Fisher, and Frey (2012) argue that teachers should "move students purposefully through increasingly complex text to build skill and stamina" (p. 58). Limiting students to only independent-level texts limits their exposure to complex vocabulary, language, and content that contributes to the development of more sophisticated reading comprehension skills. Shanahan (2020) recommends teachers provide their students with texts across a range of levels, using more complex texts for teacher-guided reading instruction and less complex texts when students read independently.

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Selecting appropriately complex texts relies on analysis of text features, reader characteristics, and task demands (National Governors Association Center for Best Practices & Council of Chief State School

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Officers, 2010). Quantitative readability formulas such as the Lexile measure (Metametrics, 2022) evaluate surface features of a text that are readily counted, such as word frequency and sentence length. Quantitative formulas do not account for deeper features of text that increase the cognitive load of reading. Qualitative analysis of text complexity fills this gap by relying on human raters to evaluate text features such as vocabulary, sentence structure, coherence, organization, and background knowledge requirements (Shanahan et al., 2012). When combined with information about reader characteristics (e.g., the student's knowledge of the topic) and task demands (e.g., the level of scaffolding provided), quantitative and qualitative evaluations of text complexity can guide teachers in matching appropriate texts to readers (Hiebert, 2012).

Adaptive Text Leveling in Newsela
Newsela provides five levels of text complexity for all nonfiction content so teachers can provide appropriately leveled texts based on the characteristics of their students and their instructional goals.

The original text represents the highest level of text complexity available, and Newsela editors adjust various features of the text to rewrite four additional versions appropriate to lower grade levels. **Editors evaluate 11 quantitative and qualitative dimensions of text complexity, including vocabulary, sentence structure, text cohesion and organization, and knowledge demands.** To decrease text complexity, editors adjust language and add supportive content without altering the original meaning of the text.

Students are matched to texts in Newsela in two ways: automatically or through teacher selection. Newsela defaults to automatic level selection using an algorithm based on student performance on either the comprehension quiz questions that follow each Newsela text (among other factors) or on the NWEA MAP® Growth™ Reading assessment for NWEA customers who opt to share that data with Newsela.

Teachers can also choose to select and lock the text level for each student to increase the level of challenge for teacher-led instruction. For instance, teachers may decide to assign grade-level texts to students who are reading below grade level for scaffolded instruction and practice in reading comprehension strategies. Teachers can use Newsela's presentation mode to project the text while they think aloud and annotate to model their own strategic reading processes. Alternatively, a teacher might print an article at a higher level for mixed ability groups to work through together. By providing multiple levels for each text, Newsela flexibly supports both independent reading and reading with teacher or peer guidance.

Expanding Content Knowledge to Facilitate Learning

Expanding content knowledge enables students to acquire increasingly complex subject-area knowledge. Neuroscience research demonstrates that the brain relies on existing knowledge in long-

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term memory as a foundation upon which to construct new knowledge (American Psychological Association & Coalition for Psychology in Schools and Education, 2015; Sweller, 2008). For instance, Beier and Ackerman (2005) found that people with prior knowledge of complex subjects such as cardiovascular disease and photocopy technology learned more from watching videos on those topics than those without such knowledge.

Working memory functions better when it can rely on "familiar, organized information from long-term memory" that reduces the cognitive load of processing new information (Sweller, 2008, p. 34). Working memory is limited in capacity and duration: people can hold about seven units of information in working memory for only a few seconds without rehearsal (Baddeley, 2000; Day & Goldstone, 2012; Miller, 1956). Knowledge in long-term memory is structured through a chunking process that organizes it into a set of smaller, more manageable units called schemas (Day & Goldstone, 2012). Drawing on relevant schemas from long-term memory frees up working memory for intaking, processing, and thinking critically and creatively about new information (Catts, 2022).

Classic studies in the cognitive science of reading demonstrate that readers who cannot access existing knowledge schemas struggle to interpret an author's message. Bransford and Johnson (1972) asked participants to read ambiguous passages with multiple interpretations. One passage began, "The procedure is actually quite simple. First you arrange things into different groups depending on their makeup. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set" (Bransford & Johnson, 1972, p. 722). When researchers revealed prior to reading that the passage was about doing the laundry, participants demonstrated stronger comprehension and recall than those who were provided with the topic after reading or not at all.

Similarly, Recht and Leslie (1988) found that middle school students who read about a baseball game were better able to recall, summarize, and identify important information from the passage when they had greater prior knowledge about baseball. The impact was the same regardless of students' reading ability, indicating that prior knowledge was powerful enough to overcome poor reading skills.

Given the sheer amount of content knowledge required for learning across the subject areas, this knowledge must be acquired gradually over time. **A content-rich curriculum that provides opportunities for wide reading across topics and genres helps students establish foundational knowledge for future learning and critical thinking** (Hirsch, 2006).

Newsela's Curated Text and Multimedia Content
Newsela's curated content includes 15,000+ texts and hundreds of multimedia resources. This vast catalog provides a content-rich supplement to core instruction that supports students in building foundational knowledge for learning grade-level concepts.

At least 10 new texts written at five levels each are added to Newsela daily, including articles on current events that build students' awareness of the world around them. Newsela's ever-growing

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catalog of multimedia content also covers a wide range of topics and includes interactive videos, maps, podcasts, infographics, and photos. **Beyond the news, Newsela's text and multimedia content helps students develop broad background knowledge across subject areas by covering 20+ genres, including primary sources, reference materials, speeches, opinions, interviews, biographies, court opinions, narrative nonfiction, fiction, myths, legends, and folktales**.

Text and multimedia content is pre-curated by Newsela editors to provide teachers with optional, ready-to-use text sets and collections united by a common theme or subject. Individual texts and multimedia assets also are aligned to subject-specific standards to help teachers locate content that builds knowledge to support their instructional goals. Curated media sets include audio and visual representations that show as well as tell students key information, such as the history of traditional dances, or how taxes work.

As an example of one type of content curation, Newsela's Curriculum Complements are collections of texts and multimedia that map directly to popular curricular materials to provide a content-rich supplement to the concepts taught in curricular frameworks across ELA, science, and social studies. ELA Curriculum Complements for programs such as Into Literature® by Houghton Mifflin Harcourt expand on the range of texts that core programs provide, supporting development of cultural and historical knowledge essential for understanding texts and topics students read in language arts classes. Science Curriculum Complements for programs such as FOSS Next Generation help students make real-world connections to the phenomena they are exploring with frequently updated content that provides the latest information in a field of study. Social Studies Curriculum Complements for programs such as History Alive! by Teachers' Curriculum Institute provide primary and secondary sources relevant to curriculum units and topics across history, geography, government, and economics so that students can build a nuanced understanding of both the past and today's issues.

Additional text sets and collections that support development of content knowledge around a particular topic or text are described later in the section on Developing Background Knowledge with Newsela's Text Sets and Collections.

Using Ongoing Formative Assessment to Provide Targeted Instruction and Feedback

Students learn at different rates, and they bring varied experiences and backgrounds to the classroom. One-size-fits-all instruction does not work for all students: Instruction is most effective when it builds on students' strengths and targets their needs (Subban, 2006).

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Ongoing formative assessment, also known as "assessment for learning," provides evidence of student learning that is used to make targeted decisions about instructional next steps (Wiliam, 2011). Formative assessments are informal and administered frequently, often daily, to evaluate small units of student learning (Biancarosa & Snow, 2006). **Frequent assessment creates a data feedback loop that supports teachers in iteratively adjusting instruction to the evolving needs of their students, evaluating the impact of those adjustments, and using that information for continuous improvement.**

Formative assessments should be tied to curricular standards to provide meaningful information about progress towards year-end goals and offer insight into the source of student misconceptions (Pellegrino, 2014). Teachers can use formative assessment data to determine which skills or standards to work on with which students. Reviewing formative data at the classroom level enables teachers to identify individual students with unique instructional needs, group students with similar instructional needs for small-group instruction, and provide whole class re-teaching when many students struggle with the same concept.

Frequent assessment equips teachers with data for providing targeted, timely feedback. Providing feedback on constructed responses and allowing students time for revision results in higher-quality writing (Hattie et al., 2021). The most useful type of feedback on written responses provides students with specific next steps they can take to improve their understanding of the topic or the writing itself. Feedback also supports learning from multiple-choice assessments. While correctly answering multiple-choice questions enhances retention of information—a phenomenon known as "the testing effect" (Roediger et al., 2011)—incorrectly answering multiple-choice questions may lead students to learn false information (Roediger & Marsh, 2005). The presence of incorrect answer choices can lure students into believing they have selected the correct answer. Providing corrective feedback either during test-taking or immediately after allows students to identify and address misconceptions before they become entrenched, resulting in greater retention of correct information (Butler & Roediger, 2008).

Frequent Formative Assessment and Insightful Reporting in Newsela
Newsela's quizzes, Power Words activities, and write prompts provide ongoing formative assessment to support targeted instructional decision-making and responsive feedback. These low-stakes, formative assessments accompany Newsela texts and videos to check for understanding and elicit critical thinking using text-dependent questions that are aligned to subject-specific standards for English language arts, science, and social studies.

Quizzes ask four[1] multiple-choice questions relevant to concepts such as main ideas and key details, connections between text elements, text structures, and the author's craft. Using Newsela's 11 Dimensions of Text Complexity (described in the section on Adaptive Text Leveling in Newsela), quiz

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1   Some Newsela texts, such as those from Newsela's Reading Skills Collection, contain eight multiple-choice questions.

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questions are written at five levels of complexity to match the level of the text. Quizzes target the same anchor standards across levels to facilitate comparison across students reading at different levels. Quizzes are automatically scored to save grading time, offer teachers timely insights into student understanding, and provide immediate corrective feedback to students. Students see their selected answer and the correct answer right next to the text, so they can reread to understand why their original choice was incorrect. Teachers can also reset quizzes so students can try again.

Power Words activities assess students' understanding of high-utility, Tier II words found in Newsela content. Students answer two multiple-choice questions per Power Word that tap into their understanding of the word's use in context and their knowledge of word relationships. Like quizzes, Power Words activities are automatically scored to offer students immediate corrective feedback. Students see the correct answer alongside the text so they can go back and reread the word in context to revise their understanding of it.

Newsela's open-ended write prompts offer students opportunities to reflect upon and synthesize learning after reading a text or reviewing multimedia content. Subject-specific write prompts assess standards-based writing and critical thinking skills across English language arts, science, and social studies. Newsela content may include more than one write prompt that differs by subject area, and teachers may create their own write prompts or edit existing prompts to target specific learning objectives.

Teachers use a four-point rubric to score write prompt responses as *emerging, developing, proficient,* or *exemplary,* and each scoring category provides hover-over guidance for determining a student's level. Teachers can include a personalized comment to explain their reasoning for the score and potential next steps for improvement, and they can also send the assignment back to the student for a rewrite. Students will see their original writing, initial score, and the teacher's comment. Write prompt performance can help guide class discussions on content that requires re-reading or further investigation.

The reporting Binder provides real-time, updated data from each of these formative assessments (and more) to teachers, administrators, and students to monitor progress, inform instruction, and provide feedback.

Teacher reporting in the Binder gives educators a view into their students' activity and performance on the Newsela platform. Teachers can monitor student reading behavior, review student performance on assessments such as quizzes, and grade student answers to write prompts. The Binder allows teachers to combine student usage behavior (e.g., time spent reading, average reading level) with performance on Newsela assessments to get a fuller picture of student achievement, and the student-facing Binder includes similar data to support them in monitoring their own level of understanding and correcting misconceptions as needed.

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A key feature of the Newsela Binder is its focus on reading skills. Newsela's quiz questions are aligned to one of eight reading skills, and teachers can review students' performance on each of these skills to identify relative strengths and areas where additional instruction may be warranted. Teachers can drill down to review student-level performance on individual quiz questions by standard to gain a detailed understanding of performance across texts. These data can be used to identify students who need additional assistance, determine which skills or standards need review, guide selection of future readings that provide further practice in target skills, and make decisions about student groupings.

Offering Diverse Perspectives to Facilitate Comprehension and Engagement

Students who avoid reading often see the texts they are assigned at school as irrelevant, leading to disengagement with the content (Guthrie et al., 2012). Because textbooks are physically limited in the amount of information they can present on a topic, they often fail to provide a variety of perspectives that feel relevant to each student in a classroom. Also, today's students are growing up in a world where constantly updated information is the norm, and textbooks may feel outdated when the information they provide is no longer current. **School districts typically adopt new curricula every six to ten years (Allen & Seaman, 2017), so information on current events is usually lacking.**

Textbooks may also provide limited and biased representations of various groups and viewpoints, causing teachers to seek out supplemental materials that offer diversity and relevance. **Forms of bias found in textbooks include invisibility (underrepresenting certain groups), stereotyping (overgeneralizing a group's characteristics), linguistic bias (using terms that exclude or devalue groups), fragmentation and isolation (separating issues of less powerful groups), imbalance and selectivity (presenting only one side), and unreality (avoiding controversial topics)** (Intercultural Development Research Association, 2016; Sadker & Sadker, 1982).

Today's classrooms are more diverse than ever: between 2010 and 2021, the proportion of white students in American schools declined, while the proportion of Hispanic, Asian, and biracial students increased (National Center for Education Statistics, 2023a). Yet, females and people of color tend to be underrepresented in textbooks and portrayed in stereotypical and fragmented ways (Blumberg, 2008; Chick, 2006; Clark et al., 2004; Deckman et al., 2018; Woyshner & Schocker, 2015).

This pigeonholing reduces the breadth of opportunities that all students envision for themselves. Rudine Sims Bishop (1990) emphasized the importance of texts that serve as "windows" to help students learn about the unfamiliar, build empathy, and reduce implicit bias, as well as texts that serve as "mirrors" to support students in making connections that facilitate comprehension and inclusion. Research has shown that exposing students to positive exemplars of people from other racial groups can reduce their implicit biases (Gonzalez et al., 2017).

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Beyond texts that represent a diversity of identity factors such as race and gender, texts that represent diverse opinions and perspectives are essential to well-rounded content-area learning. **Multiple sources of information representing a variety of viewpoints are often essential to drawing informed conclusions and avoiding bias** (Barzilai et al., 2018).

Texts that represent diverse perspectives also facilitate comprehension, motivation, and engagement for learning. The ability to make connections between background knowledge, personal experiences, and text brings relevance to the reading task and is a key strategy for reading comprehension (Afflerbach et al., 2020; Duke & Pearson, 2009). Representing diverse perspectives in school texts fosters a sense of belonging and builds students' capacity to consider points of view and narratives that are different from their own (Biancarosa & Snow, 2006).

Diverse Perspectives in Newsela
Newsela's extensive catalog of 15,000+ texts and hundreds of multimedia resources features a range of perspectives and voices so students can make connections that support comprehension, draw informed conclusions, experience a sense of belonging, and build empathy for those who are different. Constantly updated content ensures that students always have access to news on current events and contemporary issues.

Newsela content includes authentic texts authored by members of the community that is represented, providing "mirrors" that allow students to use their existing cultural knowledge as well as "windows" that offer nuanced depictions of different worlds and challenge stereotypes. Throughout the year, Newsela editors curate collections of seasonally relevant content that highlights diverse perspectives related to heritage months.

Newsela's editorial team selects, levels, and publishes content using a framework of inclusion and anti-bias measures. Content is screened to limit any use of gender, ethnic, racial, religious, and cultural stereotypes, even when those stereotypes are positive. Linguistic bias is minimized through procedures such as capitalizing the "B" in "Black" and the "I" in "Indigenous" when referring to a person's race, using the term "enslaved" as an adjective rather than using "slave" as a noun to separate a person's identity from their circumstance, and referencing specific tribes and communities to highlight that Indigenous people are not a monolithic group.

In addition to focusing on matters of personal representations, Newsela also provides continually updated content that supports balanced coverage of current events and issues. At least 10 new articles are added daily from 180+ real-world publishers that provide a variety of perspectives, including the New York Times, USA Today, The Washington Post, The Economist, The Guardian, PBS News Hour, Encyclopedia Britannica, National Geographic, Smithsonian, and Scientific American. **Content is obtained from predominantly centrist sources using the Ad Fontes Media Bias Chart (Ad Fontes Media, n.d.) to ensure that news content is impartial.**

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Articles on political topics come from diverse sources to collectively present multiple sides of an issue, logical arguments, and opinions by credible authorities, and editors engage in extra rounds of fact-checking and editing for content about complex topics. All opinion pieces are clearly marked to ensure clarity and prevent confusion among readers, and maturity bands (i.e., lower elementary, upper elementary, middle school, high school) and sensitivity labels are applied to help teachers select appropriate content.

These measures ensure that with Newsela, students can read multiple texts representing diverse perspectives to gain a more well-rounded view of a topic or issue. For example, Newsela's Debate and Discussion Collection features sets of related texts that have been curated around specific topics of debate, such as whether junk food should be served in schools, or whether animals should be used for scientific research. An expansive library of Pro/Con articles gives students the opportunity to explore multiple perspectives on a variety of controversial topics such as the death penalty, cancel culture, and affirmative action. These resources come from fact-checked sources so students can draw their own informed conclusions.

Cultivating Motivation and Engagement for Reading and Learning

Motivation drives students' engagement in learning, directing their attention and behaviors towards achieving academic goals and providing them with energy to persevere through challenging tasks (Wigfield et al., 2008). Engagement is particularly important for comprehending and learning from text: skilled readers read actively, monitoring their understanding of text and deploying strategies to enhance and repair comprehension when it breaks down (Afflerbach et al., 2020; Duke & Pearson, 2009).

Yet, motivation for reading (McKenna et al., 2012; Strommen & Mates, 2004; Unrau & Schlackman, 2006) and for school in general (Wang & Eccles, 2012) declines as students get older. These declines are unfortunate, as students who are motivated to read do so more frequently and become stronger readers as a result (Allington & McGill-Franzen, 2021; Schiefele et al., 2012).
Students who avoid reading often struggle with reading, find it tedious or boring, fail to see the relevance of the texts they read in school, and lack opportunities to choose the texts they read (Guthrie et al., 2012; Strommen & Mates, 2004). Students who enjoy reading are motivated by intrinsic factors, such as self-efficacy, or confidence in their reading abilities, and interest in the theme or topic (Mucherah & Yoder, 2008).

These findings mirror Self-Determination Theory (Ryan & Deci, 2000), a general theory of motivation that posits intrinsic motivation is facilitated by fulfilling three innate psychological needs—autonomy, relatedness, and competence—plus personal interest in the activity.

Autonomy is the ability to exercise one's own agency. Becoming independent is part of growing up, and students relish opportunities to make their own choices as they get older (National Academies of Sciences et al., 2019). Relatedness is the feeling of being connected to others. Peer relationships and

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social inclusion become more important to students over time. They are increasingly motivated by peer-oriented learning experiences and feelings of belonging brought on by instructional materials that reflect their identities and experiences (Alliance for Excellent Education, 2018). Competence is the experience of success in achieving a goal. Instruction and practice at an optimal level of challenge—neither frustratingly difficult nor tediously easy—promote the production of dopamine, which increases focus, facilitates motivation, and enhances memory for what is learned (Sousa & Tomlinson, 2018).

Educational experiences that meet all three of these needs using materials that students find personally interesting have the potential to increase engagement in deep learning and enhance retention.

Motivating Students with Newsela's High-Interest Content and Features that Support Autonomy, Relatedness, and Competence
With Newsela, teachers can facilitate motivation for reading and learning through high-interest content and approaches to learning that meet students' intrinsic needs for autonomy, relatedness, and competence.

Newsela's extensive library of meaningful, up-to-date, and relevant content sparks student interest by offering a wide range of topics that students find compelling, from TikTok, to sports, to music. Texts and multimedia cover a diverse array of opinions and viewpoints so students can engage with content that matches their unique interests. Content is updated daily, so students always have something new and interesting to read.

Using the reporting Binder, teachers can see which articles students have read independently to better understand their interests and assign more texts in that area. Teachers can also use the Small-Group Assignments feature to group students by interest, building enthusiasm for learning about a topic that is personally meaningful alongside peers who share that enthusiasm.

Teachers can meet students' need for autonomy by offering them options for texts and multimedia. Students can explore the full Newsela platform to select options for independent reading and research projects, or teachers may offer text sets that they have curated or that have been curated by Newsela staff to allow students to select from a finite number of related reading options.
Student agency is also supported through the Newsela platform itself. Students can self-direct their use of built-in supports while reading, including annotation tools for making notes, a read-aloud feature to support struggling readers and build listening skills, options to adjust font size and toggle paragraph numbers on and off for visual clarity, and Power Words definitions that explain the meaning of unknown words in context.

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Newsela supports relatedness through authentic, inclusive, diverse materials that reflect the experiences of all students. As mentioned above, Newsela editors strive to source culturally responsive content from BIPOC (Black, Indigenous, and people of color) sources so they can tell their own stories. For example, the Celebrating Black Voices Collection includes articles about Black writers, poems by Black poets, and novel study text sets to support teaching novels by Black authors. Collections for Women's History Month, Latinx and Hispanic Heritage Month, Indigenous Peoples Day, Celebrating Pride Month, and Disability Rights ensure that all students are represented in the educational materials they learn from.

Providing each nonfiction text at five complexity levels promotes both relatedness and competence. **When all students have access to the same content as the rest of the class, regardless of their reading level, they can participate in class discussions and group activities with their peers, fostering engagement and a sense of belonging.**

Reading text at an appropriate level also facilitates reading success, which makes students feel competent and builds knowledge and skills to support further learning across subject areas. Quiz questions are calibrated to the same level as the text, giving students the confidence to demonstrate their learning. Students can monitor their own progress in the Binder, which tracks every article they have read, including Lexile levels, quiz scores, and write prompt performance. Seeing growth over time shows students that they are capable of learning and motivates their efforts toward continued growth.

Newsela ELA: Developing Reading Comprehension and Analysis Skills Based on the Science of Reading

Newsela ELA is grounded in the science of reading to support development of text comprehension and analysis skills. **The science of reading is an interdisciplinary body of empirical research that informs "how proficient reading and writing develop; why some have difficulty; and how we can most effectively teach and, therefore, improve student outcomes through prevention of and intervention for reading difficulties"** (The Reading League, 2022, p. 6). Scientifically-based research uses rigorous study designs that allow researchers to understand how the brain learns to read and identify effective instructional approaches. It is also peer-reviewed to ensure quality and integrity.

Research in the science of reading has revealed that skilled reading results from the fluent and strategic coordination of multiple underlying skills. Hoover and Gough's (1990) Simple View of Reading

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confirmed that skilled reading results from a combination of decoding and language comprehension, and Scarborough's (2001) Reading Rope expanded on this model to show that word recognition and language comprehension are themselves multifaceted skills with underlying components.

Language Comprehension

Background Knowledge
facts, concepts, etc.

Vocabulary
breadth, precision, links, etc.

Language Structures
syntax, semantics, etc.

Verbal Reasoning
inference, metaphor, etc.

Literacy Knowledge
print concepts, genres, etc.

INCREASINGLY STRATEGIC

Word Recognition

Phonological Awareness
syllables, phonemes, etc.

Decoding
alphabetic principle,
letter-sound correspondences

Sight Recognition
of familiar words

INCREASINGLY AUTOMATIC

Skilled Reading

Fluent execution and coordination of language comprehension and word recognition.

Word recognition is the major focus of early literacy development, which requires phonological awareness, or the ability to identify and manipulate the sounds of spoken language; decoding skills for reading unfamiliar words; and sight recognition of words that have become familiar over time through abundant practice.

As students gain proficiency in word recognition, fluency and language comprehension become larger contributors to further literacy development (Biancarosa & Snow, 2006; Catts et al., 2006). Both elementary and secondary students with deficits in decoding continue to need explicit instruction in word recognition while also requiring texts that ease the burden of decoding so they can focus on building language comprehension skills in tandem. **Language comprehension includes knowledge of vocabulary and language structures, background knowledge, verbal reasoning skills such as inferencing and interpreting figurative language, and literacy knowledge of genre elements and text structures.**

Newsela eases the cognitive burden of decoding and supports fluency growth by providing students with appropriately leveled texts, as described in the section on Adaptive Text Leveling in Newsela. **Newsela also enhances language comprehension development through vocabulary and knowledge building, comprehension skills and strategies instruction, and differentiation features that support students with a variety of reading and language skill levels**, as described in the following sections.

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Building Vocabulary and Background Knowledge to Support Comprehension

According to the construction-integration model, a prominent model of comprehension based on research in the science of reading, reading comprehension results from the construction of a multi-level mental representation of text (Kintsch, 1988, 2012). At the textbase level, readers form a representation of "what the text says" based on understanding its words and sentences and the logical relationships between them (e.g., cause and effect). At the situation model level, the textbase is integrated with the reader's own linguistic and background knowledge (also called "prior knowledge," "world knowledge," or "content knowledge") to form a mental representation of the situation in the text. Thus, vocabulary and background knowledge are both essential to comprehending and learning from text given their role in situation model construction.

Vocabulary

Vocabulary knowledge enables students to understand the language of text and further expand their vocabulary through reading. Most of the 17,000 base words that adult speakers of English know are acquired incidentally through exposure in context because there are simply too many words to teach them all through direct instruction (Goulden et al., 1990). Reading is an effective strategy for acquiring new vocabulary because texts contain a much broader range of words than are typically used in speech (Hirsch, 2006; Kamil & Hiebert, 2005). Students who are more proficient and prolific readers are better equipped to acquire new words through reading, providing them with broader and deeper vocabulary knowledge to support subsequent reading comprehension (Cain & Oakhill, 2011; Stanovich, 1986).

The success rate for learning words from context varies based on characteristics of both the reader and the context (Scott, 2005). Struggling readers and students with less vocabulary knowledge are at a disadvantage when using context to understand unknown words. High school students are four times as likely to learn words from context as elementary school students, who have less-developed vocabularies, and high-ability readers are more than twice as likely to learn words from context as low-ability readers (Swanborn & De Glopper, 1999).

The usefulness of the context, the ratio of unknown to known words in a text, and the frequency with which unknown words are repeated also impact the likelihood that students will understand them. Revising text to provide more helpful context, a manageable number of unknown words, and more frequent repetitions all support incidental vocabulary learning (Scott, 2005). A ratio of 1:150 unknown to known words results in a 30 percent chance of learning the word, while a ratio of 1:75 reduces the probability to 14 percent, and a ratio of 1:10 further reduces it to 7 percent (Swanborn & De Glopper, 1999).

Direct instruction helps students overcome some of the obstacles to acquiring words through incidental exposure. **The National Reading Panel recommends a combination of direct instruction in high-utility word meanings and incidental exposure to words in multiple contexts to improve text comprehension and expand vocabulary knowledge** (Eunice Kennedy Shriver National Institute

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of Child Health and Human Development et al., 2000).

Pre-teaching words from a text that are potentially unfamiliar to students enhances their comprehension of the text (Wright & Cervetti, 2017). Beck, McKeown, and Kucan (2013) advocate targeting "Tier II" words, or high-utility, academic words that are found across a variety of domains—words like *precede, auspicious,* and *retrospect*—for direct instruction. They recommend teaching around 400 new words per school year, which amounts to two to three new words per day. A content-rich curriculum comprising a wide range of texts and topics provides repeated exposures to words in multiple contexts and offers opportunities for targeted instruction in word meanings (Catts, 2022).

Building Vocabulary with Newsela's Power Words
Newsela's library consists of authentic texts that provide students with implicit exposure to a rich set of high-utility, academic vocabulary words in context. Articles on current events offer students opportunities to acquire new words relevant to the issues of the day that they can then practice using in classroom discussions and writing assignments.

For select articles across genres, **Newsela's Power Words feature provides direct instruction for Tier II words** found in Newsela content. Editors review articles to choose two to five target academic words. Each Power Word is underlined in the text so students can hover over it and read a short, student-friendly definition specific to the word's use in context. Audio is available to guide pronunciation and allow students to hear the definition read out loud. These point-of-use supports reinforce the implicit vocabulary learning that happens through exposure to the words during reading.

Power Words activities give students additional practice with the words after reading. Students answer two multiple-choice questions for each Power Word that tap their understanding of the word's use in context and relationships to other words. Newsela quizzes also include vocabulary items to assess students' understanding of additional high-utility words in context.

Students can review their Power Words from every article they've read on Newsela in their personal Word Wall. In the Word Wall, students can see how many Power Words they've interacted with, check pronunciations and definitions, and locate additional articles containing their Power Words for extra exposure to the words in novel contexts. Teachers can encourage students to use Power Words in their responses to write prompts for added practice. By offering multiple opportunities for direct instruction, exposure in context, and practice, Newsela supports students in acquiring important academic vocabulary to support further reading and learning.

Background knowledge
Background knowledge is essential to reading comprehension because readers must make text-to-text, text-to-self, and text-to-world connections to create an accurate and rich situation model (Keene & Zimmermann, 1997).

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A seminal study by Recht and Leslie (1988) illustrates that relevant background knowledge is so powerful that it can even overcome poor comprehension skills. As briefly described above, in one research study, middle school students read a description of a baseball game and were asked to recall, summarize, and identify important events from the text. Students who had a high degree of baseball knowledge outperformed students who lacked such knowledge on all three tasks, regardless of their previously assessed reading ability.

Background knowledge is essential to text comprehension because authors necessarily leave informational gaps in their writing. They make assumptions about what their readers already know to determine what they must make explicit and what they can leave out, expecting readers to infer what they omitted based on their background knowledge. The author of the baseball text in Recht and Leslie's (1988) study did not describe the rules of the game; they expected readers to come equipped with that knowledge.

Background knowledge also supports students in understanding vocabulary in text. Because words have multiple meanings, readers must draw on their knowledge of the world to determine the specific meaning of a word in context. Catts (2022) gives the example of using background knowledge to determine that the word "pitcher" refers to a person rather than a vessel when reading a passage about baseball.

Each text comes with its own set of knowledge demands, so developing broad, general knowledge across a wide range of topics helps students interpret and learn from text (Hirsch, 2006; Willingham, 2017). **Researchers have found strong correlations between students' general knowledge—including both cultural knowledge (e.g., names of famous people) and factual knowledge (e.g., of science, history, and literature)—and reading comprehension** (Cunningham & Stanovich, 1997).

The knowledge demands of content-area reading increase as the texts students are required to read become more complex. Just as vocabulary knowledge facilitates comprehension and therefore the acquisition of more vocabulary, **background knowledge supports comprehension and results in the acquisition of further background knowledge from text.** As Torgesen and colleagues (2007) conclude, "[S]tudents who do not keep pace with the increasing demands content-area texts place on prior knowledge will fall further and further behind in their ability to construct the meaning of the text" (p. 8). In addition to content-area instruction, they recommend students read both broadly to develop general knowledge across a wide range of topics and deeply to gain knowledge about specific topics that are the focus of learning objectives.

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Developing Background Knowledge with Newsela's Curriculum Complements, Text Sets, and Collections
Newsela ELA's pre-curated, ready-to-use Curriculum Complements, text sets, and collections provide groups of articles and multimedia resources united by a common theme or subject to help students develop knowledge around a topic or literary text. Curriculum Complements, which provide supplemental resources to build background knowledge to support learning from commonly used curricular materials, were described in detail in the earlier section on Newsela's Curated Text and Multimedia Content. Select text sets and collections, which are structured to build background knowledge by text, theme, or subject, are described in the following paragraphs.

For example, Newsela's Novel and Book Studies Collection complements 150+ novels commonly read in the ELA classroom—including classics like To Kill a Mockingbird and modern works like The Hate U Give—with informational texts, author biographies, literature, and poetry to help students build background knowledge relevant to the novel's cultural and historical context. To Kill a Mockingbird was written by Harper Lee in the 1960s, based on events in Monroeville, Alabama in the 1930s that are likely to feel far-removed from the lives of today's students. Texts and multimedia about Lee's life, the story's setting, and real-life examples of racial injustice from the past through the present give students a framework of knowledge to connect with as they read the novel and support them in thinking critically about its greater meaning and relevance.

Newsela ELA's Paired Texts Collection provides 250+ paired fiction and nonfiction texts centered on shared themes, topics, questions, and moments in history that assist students in making connections with literature. For instance, Upton Sinclair's The Jungle, a grizzly representation of the American meat-packing industry at the turn of the 20th century, is paired with an article about a modern topic that today's students can relate to: the debate around vegetarianism. The article explicitly references The Jungle to help students connect the historical context with modern concerns about food safety and animal welfare, providing a contemporary lens through which to read the book and draw conclusions relevant to their own lives.

Teachers can customize collections by adding additional relevant resources from Newsela, or they can build their own collections to provide a comprehensive learning experience around a theme or topic. By evaluating potential gaps in their students' knowledge relevant to the target text, teachers can search for texts and multimedia resources on Newsela that address these topics. Thematic collections in Newsela ELA include articles relevant to common themes in fiction, such as freedom, growing up, and courage, and can help jumpstart this work. Teachers can browse by theme to identify articles that build knowledge related to books that treat these themes.

Developing Active Readers Who Apply Metacognitive Strategies to Comprehend and Learn from Text

According to research in the science of reading, skilled reading relies on cognitive strategies for understanding text, monitoring comprehension, and integrating knowledge. As shown in Scarborough's (2001) Reading Rope, readers must become "increasingly strategic" in their

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implementation of literacy skills from the language comprehension strands as text becomes increasingly complex. These strategic actions depend on executive function skills, including working memory, verbal reasoning, planning, organizing, and self-monitoring (Cutting & Scarborough, 2012).

Teachers can support students' development of strategic reading skills through explicit instruction and modeling of skills and strategies for reading and comprehending text. Annotation facilitates active reading practice and opportunities for students to learn when and how to implement reading strategies. Post-reading activities support self-evaluation of comprehension as well as consolidation, critical thinking, and application of text information. Instruction in synthesizing information across texts helps students build nuanced knowledge and make informed decisions based on a variety of sources.

Explicit Strategies Instruction, Modeling, and Practice
Studies in which skilled readers think aloud as they read have revealed their use of cognitive strategies before, during, and after reading, which are summarized in Table 1 (Afflerbach et al., 2020; Duke & Pearson, 2009). **Reading strategies are "deliberate, goal-directed attempts to control and modify the reader's efforts to decode text, understand words, and construct meanings of text"** (Afflerbach et al., 2020, p. 100).

Table 1: Cognitive Strategies Used by Skilled Readers (Afflerbach et al., 2020; Duke & Pearson, 2009)
Reading actively, monitoring comprehension, and taking actions to repair or enhance it
Visualizing text to create a mental image of the situation it describes
Annotating to identify important information and question the text
Asking and answering one's own questions about text
Summarizing and paraphrasing text to consolidate important ideas
Identifying important ideas and making logical connections to understand the text as a whole
Using knowledge of text structure to make connections between ideas in the text
Using graphic organizers to visually represent the structure of text information
Determining the meaning of unfamiliar words in context
Using background knowledge to interpret the text, and using the text to revise existing knowledge
Drawing inferences based on text and prior knowledge about what is not explicitly stated
Making and confirming predictions before and during reading
Evaluating the quality and value of the text, including author's purpose and reliability
Adapting reading strategies to the text type or genre (e.g., narrative, expository)

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Strategic readers are active and metacognitive, monitoring their comprehension, noticing when it breaks down, and taking actions to repair and enhance it. They use strategies like visualizing, annotating, asking and answering themselves questions, summarizing, and paraphrasing to construct, evaluate, and revise their situation model as they read.

Strategic readers are also intent on making meaning from text. **They identify the important ideas and strive to make logical connections between them using background knowledge, vocabulary knowledge, and knowledge of text structures.** They may use signal words and graphic organizers to identify and map the structure and connections between ideas in the text.

Advanced readers adapt their use of strategies as appropriate to the text type or genre. For instance, they focus on plot elements when reading narrative texts and on summarizing when reading informational texts. They also evaluate the quality and value of the text as they read and afterwards, keeping in mind the author's purpose and authority on the topic when determining whether and how to use text information after reading.

The National Reading Panel recommends explicit instruction in literacy skills and comprehension strategies to engage students in active reading and support comprehension and analysis of text (Eunice Kennedy Shriver National Institute of Child Health and Human Development et al., 2000). Research has shown that strategies instruction improves the comprehension of elementary (Guthrie et al., 2004; Reutzel et al., 2005; Shanahan et al., 2010), middle, and high school students (Biancarosa & Snow, 2006; Kamil et al., 2008; Torgesen et al., 2007), including older struggling readers (Edmonds et al., 2009).

To implement comprehension strategies instruction, teachers provide explicit descriptions of the strategies, model strategy use while reading and thinking aloud, engage students in teacher-guided practice, and incrementally shift them to collaborative and then independent practice; this instructional approach is known as the gradual release of responsibility model (Duke & Pearson, 2009).

Teaching when, where, and why to use each strategy is a key aspect of effective strategies instruction (Cantrell et al., 2010; Shanahan et al., 2010). According to Torgesen and colleagues (2007), "As text becomes more complicated in middle and high school, and as the demands for learning from text (particularly expository text) increase, students must become more sophisticated in both the range and the flexibility of their reading comprehension strategies in order to maintain or accelerate their level of reading proficiency" (p. 9). For instance, while strategies such as inferencing are useful for understanding most texts, strategies like evaluating source reliability are more important when reading informational texts, while attention to story elements such as character and setting is particularly useful when reading narrative texts (Catts, 2022; Duke & Pearson, 2009).

Delivering Explicit Strategies Instruction, Modeling, and Practice with Newsela Lesson Sparks
Newsela ELA's Lesson Sparks offer teachers instructional guidance for implementing explicit literacy skills and strategies instruction, modeling, and practice using Newsela content. The Reading Skills Collection includes Lesson Sparks that target genre-specific strategies skilled readers

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implement while reading fiction and non-fiction texts, and additional Newsela ELA text sets include Lesson Sparks recommending general comprehension strategies appropriate for a given text, including the following:

- *Annotating the Text*: highlighting important information and taking notes while reading to summarize what happened and note areas of confusion.
- *Asking Questions*: asking and answering curiosity questions before, during, and after reading.
- *Summarizing the Text* and *Paraphrasing the Text:* identifying who, what, when, where, why, and how in a text to summarize or paraphrase it in one's own words.
- *Finding the Main Idea* and *Analyzing People, Events and Ideas*: identifying important ideas in the text and making connections between them.
- *Problem and Solution, Compare and Contrast, Cause and Effect, Sequence,* and *Arguments and Claims*: focusing on how different text structures organize information and impact meaning, with corresponding graphic organizers to help students visually represent the structure of information in non-fiction texts.
- *Analyzing Word Choice and Figurative Language*: identifying and interpreting the meaning of unknown and multiple-meaning words as well as figurative language based on context.
- *Making Inferences and Predictions*: integrating background knowledge with text information to draw inferences about what the author has not stated explicitly and making and revising predictions about what will happen next.
- *Considering the Author's Purpose, Finding Credible Sources, Evaluating Arguments,* and *Evaluating Textual Evidence*: identifying the author's purpose and message, locating credible sources, examining bias, evaluating evidence, and identifying logical fallacies to draw conclusions about the quality and reliability of text information.
- *Creating Mental Images*: visualizing what is happening in the text to engage in active reading and gain a deeper understanding of complex text.
- *Genre Connections* text sets on topics like *Crafting Strong Arguments*: examining the genre-specific features[2] of non-fiction writing, such as claims, reasoning, evidence, and counter-claims.

Lesson Spark implementation guides support teachers in explicitly describing, modeling, and facilitating practice of these literacy skills and strategies, using the gradual release of responsibility model. For instance, the implementation guide for making inferences includes question stems that teachers can use as they think aloud, using clues from the text and their own knowledge to infer what the author has not stated explicitly. Presentation mode allows teachers to project the students' view of the article for the class or during small-group instruction as they model their use of strategies. Many Lesson Sparks include links to downloadable resources such as graphic organizers that support implementation of reading strategies, such as mapping out text structure or identifying text evidence and background knowledge from which to draw inferences.

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2   Newsela has also curated collections with texts that support teachers in providing genre-specific comprehension strategies instruction. For example, the *Let's Explore Genres* Collection includes text sets for identifying and analyzing common elements of fiction genres, including historical fiction, realistic fiction, myths and legends, science fiction, and poetry.

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Ongoing guided and independent practice using reading strategies with Newsela content helps students become active readers who read to learn. Teachers can use the reading skill filter in search to find articles with quizzes aligned to select reading strategies, and gradually ramp down the level of scaffolding they provide as students engage in strategies practice collaboratively, ultimately leading to independent practice. Teachers can track student quiz and write prompt performance by reading skill in the Newsela Binder, so they can identify strategies that require additional instruction and practice.

Using Annotation to Engage in Active and Strategic Reading
Strategic reading is active and engaged (Duke & Pearson, 2009). When readers' minds wander—which happens 20-30% of the time—comprehension is inhibited (D'Mello & Mills, 2021). Mind wandering can occur when texts are too easy or uninteresting, leaving too many executive function resources available to focus on other things, and when texts are too difficult, overly taxing executive function resources that are required for the strategic construction of a situation model.

Annotation is an effective reading strategy that prevents mind-wandering by facilitating active and deep engagement with the text. Annotation makes readers' thought processes explicit and helps them notice when they don't understand something. It also supports the implementation of other reading strategies (Afflerbach et al., 2020; Duke & Pearson, 2009). **Students can highlight key information like main ideas and supporting details, add marginal comments that summarize parts of the text or reflect their own interpretations, and note areas that are confusing and should be revisited and clarified.**

Explicitly teaching, modeling, and practicing annotation shows students that reading is an active process and encourages them to slow down, read more deeply, and reflect on what they are reading (Porter-O'Donnell, 2004). According to Zywica and Gomez (2008), because students who annotate "are focusing closely on the structure and content of the text, they become more active and engaged readers" (p. 156). Annotation has the additional benefit of flagging key text information for use in subsequent critical thinking activities that require text-dependent analysis.

Engaging in Active and Strategic Reading Using Newsela's Annotation Feature
Newsela's annotation feature promotes active, engaged reading that facilitates comprehension and learning. Students can highlight and comment on text to make connections, note important information, and mark passages they did not understand. Student annotations are visible to their teachers in the Binder, and teachers can respond to student comments, enabling an ongoing conversation between students and teachers. For example, teachers can create a set of annotations

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that include questions about the text or links to additional information and send them to the class, which students can then respond to asynchronously.

Through Lesson Sparks, Newsela provides teachers with instructional guidance on introducing annotation skills that support a variety of active reading strategies, including highlighting key information, summarizing parts of the text, making and revising predictions, and noting where comprehension breaks down so they can return to that part later.

Teachers can use presentation mode to model their own use of annotations and establish an annotation protocol for students to use during independent practice. For instance, teachers can ask students to highlight main ideas in one color and key details in another color, or they can ask students to highlight figurative language and use the comment feature to explain its meaning. Teachers can also assign articles with quizzes and write prompts that guide students' attention to important aspects of the text and ask students to use the highlighting and commenting features to gather evidence relevant to the questions.

Consolidating Learning after Reading by Thinking, Discussing, and Writing about Text
Forming a situation model is not the end goal of reading: students are also expected to evaluate the quality of their own comprehension; synthesize, analyze, and critique texts; and use information gained from texts to solve problems (Afflerbach et al., 2020). **Thinking, discussing, and writing about text after reading supports students in evaluating their comprehension, consolidating and integrating new information, thinking critically about text, and applying what they have learned.**

Answering questions after reading helps students evaluate whether they have comprehended the text and improves recall of text information later on, a phenomenon known as "the testing effect" (Roediger et al., 2011). After-reading questions should require students to use evidence from the text rather than answering based on prior knowledge alone (Fisher & Frey, 2012). **Text-dependent questions help students refine their situation model by guiding their attention to the most important parts of the text, based on the learning objectives for reading.** Questions that focus on simple recall support integration of text information with existing knowledge in long-term memory, while evaluative questions that ask students to apply their knowledge support transfer of learning to new contexts.

Participating in collaborative discussions about text is both enjoyable for students and improves comprehension (Pittman & Honchell, 2014). Dialogic approaches with a high degree of interaction between students and minimal teacher talk encourage students to process their thoughts about the text, put them into words, and incorporate the thoughts of their peers into their understanding of the text (Murphy et al., 2009). Teachers can facilitate the discussion by asking questions that focus on constructing a shared understanding of the text's meaning and on exploring a range of possible interpretations rather than focusing on one correct answer (Applebee et al., 2003).

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Writing about text after reading also enhances comprehension. **Writing about text requires students to identify the key information, integrate ideas within and across texts, reflect on and revise their understanding, become personally involved with the text, and think deeply about the ideas in the text to summarize and paraphrase them** (Graham & Hebert, 2011). These acts demand deep engagement with text that facilitates comprehension and critical analysis, and many of these strategies are closely related to the cognitive strategies used by skilled readers (Afflerbach et al., 2020; Duke & Pearson, 2009). A meta-analysis of the impact of writing on reading comprehension in grades 1-12 found that **writing about reading material has a positive impact on students' reading comprehension** (Graham & Hebert, 2011). Writing summaries and extended responses were among the effective approaches identified in the meta-analysis.

Consolidating Learning from Newsela with Quizzes, Discussions, and Write Prompts
Newsela provides activities that engage students in post-reading skills and strategies for reflecting on and synthesizing their learning.

Standards-based quizzes on Newsela assess key reading skills across fiction and non-fiction texts and provide opportunities for students to review text information. **Quizzes include four to eight multiple-choice questions that assess a range of reading anchor standards, from identifying main ideas and key details, to making connections between people, events, and ideas, to evaluating author's purpose and point of view.** Questions are text-dependent, requiring students to answer based on evidence from the text, which is available for reference during the quiz. Quizzes are graded automatically so students receive immediate feedback that enables them to gauge their level of understanding. Teachers can also reset quizzes, allowing students to reread to repair breakdowns in comprehension.

Newsela's write prompts solicit constructed responses to questions that require students to summarize and synthesize ideas from the text, using evidence to support their responses. By writing about the text in their own words, students process what they have read more deeply. For instance, students may be asked to write a short paragraph that explains the central idea of the article using at least two details for support. Teachers grade students' write prompt responses using a four-point rubric ranging from *emerging* responses that lack a clear claim or relevant evidence to *exemplary* responses that provide a clear claim that is well-supported with reasons and evidence from the text. **Teachers can also provide open-ended feedback in the comments portion of the grading box and return the response for revision, offering students insight into their own level of comprehension and encouraging them to think more about the text to enhance comprehension.**

Lesson Sparks offer additional opportunities for post-reading processing through discussion suggestions and writing extension activities. Text-dependent questions support whole-class and small-group discussions in which students collaboratively examine the text and make connections to personal experiences and background knowledge. Writing extension activities engage students in producing their own texts related to the reading. For instance, the poem *Notes on the Peanut* by June Jordan is followed by a writing extension activity in which students are directed to read more about

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Black inventors in a linked Newsela article and then choose one person to write a poem, speech, or song in their honor. This activity expands students' knowledge on the topic and puts them in the role of the writer, deepening their understanding of how texts are constructed.

Synthesizing Multiple Perspectives Across Texts to Build Knowledge and Make Informed Decisions

Today's students have access to an abundance of information both online and in print, and integrating different perspectives from multiple sources is often necessary to fully understand an issue, avoid biased information, and draw measured conclusions to inform decision-making (Barzilai et al., 2018). Comparing and corroborating information across texts builds nuanced knowledge, moving students away from literal, black-and-white thinking and towards critical thinking about how the information presented interacts with the author's purpose (Ciecierski & Bintz, 2018; Hirsch, 2006).

While college- and career-readiness standards emphasize intertextuality across the grade levels, textbooks traditionally lack materials to support instruction on identifying, critically evaluating, and synthesizing multiple sources (Ciecierski & Bintz, 2016). Supplemental resources that provide an extensive library of texts on a wide range of themes, topics, or genres offer teachers the opportunity to assemble related text sets or use pre-curated text sets that fill this gap.

Barzilai, Zohar, and Mor-Hagani's (2018) review of research on intertextual reading instruction found that starting with a smaller number of texts and building up to five or more texts scaffolds the difficulty of integration. For instance, teachers can start by assigning non-fiction texts that build background knowledge of a topic before assigning a paired fiction text, which subsequently reinforces concepts and vocabulary from the non-fiction text (Soalt, 2005).

As students build proficiency in making intertextual connections, they can learn to integrate more sources of information from a critical standpoint. Students tend to take information at face value, focusing more on topic relevance than source credibility when identifying sources, and they are unsure of how to resolve conflicting information across texts (Mancevice & Herman, 2016). Instruction on source evaluation can improve their ability to identify credible resources, and instruction in comparing and corroborating information across conflicting sources improves their comprehension and evaluation of complex topics (Lescarret et al., 2023; Mancevice & Herman, 2016; Wolfe & Goldman, 2005). **Summarizing and annotating the individual texts in a set helps students make comparisons across texts**, and graphic organizers can be used to track relevant information from multiple sources in one place, supporting integration of disparate information (Barzilai et al., 2018).

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Reading Across Texts with Newsela's Paired Texts, Text Sets, and Collections

Newsela's extensive library of content supports students' development of intertextual reading skills and strategies. **Teachers can create their own text pairings and sets or use Newsela's pre-curated sets that are related by topic, theme, or genre, to engage students in integrating information across two or more texts.**

As previously noted, Newsela ELA's Paired Texts collection provides 250+ paired fiction and nonfiction texts centered on shared themes, topics, questions, and moments in history that support students in making intertextual connections and building nuanced background knowledge. For instance, Anne Frank's *The Diary of a Young Girl* is paired with articles about the Holocaust, refugees in the modern era, and the therapeutic value of writing to build knowledge of the historical context, reflect the relevance of the book in today's world, and encourage personal connections with Frank's experience. The Debate and Discussion collection supports students in building critical thinking skills and integrating information across texts with potentially conflicting information. This collection features sets of related texts that have been curated around specific topics of debate, such as whether junk food should be served in schools, or whether animals should be used for scientific research. Each text set includes a selection of related articles that provide varying perspectives on the topic and questions to stimulate debate and discussion. Accompanying resources such as graphic organizers and sentence starters help students deconstruct each author's argument to identify similarities and resolve conflicting information.

Differentiating Instruction in a Whole-Class Setting to Inclusively Address Student Diversity

Students come to the classroom with unique backgrounds and educational experiences. They learn at different rates and may struggle with some skills while they excel in others (Subban, 2006). **Ten percent of students in the U.S. are English learners, which impacts their reading and learning across subject areas (National Center for Education Statistics, 2022), and 15 percent of students have learning or physical disabilities that require alternative instructional approaches and supports (National Center for Education Statistics, 2023b). Due to this diversity, students in the same grade and the same classroom vary in what they are ready to learn and how they can access content for learning.**

In terms of readiness, the brain learns best when it is challenged to go just beyond its current capabilities, but not so challenged as to cause burnout (Ericsson & Pool, 2016). Vygotsky (1978) called this level of challenge the "zone of proximal development," which is the area of learning that lies between what students can accomplish on their own and what they can achieve with assistance from someone who is more skilled, such as a teacher or a classmate, or from technology that provides scaffolding.

Neuroscience research shows why instruction within the zone of proximal development maximizes learning (Sousa & Tomlinson, 2018). New information stimulates the hippocampus, which encodes memories, and causes the release of dopamine, which induces feelings of pleasure and enhances

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attention, memory, and motivation. Instructional experiences that are too easy are perceived as boring and fail to stimulate these learning-enhancing areas of the brain. Instructional experiences that are too challenging are perceived as a threat—students are afraid of failing or embarrassing themselves—and stimulate the release of cortisol, which triggers the "fight or flight" response and shifts focus to removing the threat rather than integrating the instructional content.

Teachers can inclusively address variability in student readiness by differentiating how students access instructional content, the complexity of the learning processes they engage in, and the level of support they are provided for demonstrating their learning (Sousa & Tomlinson, 2018). Furthermore, using programs built on Universal Design for Learning principles (Meyer et al., 2014) facilitates access to instructional content for all students, regardless of ability level. The following sections describe differentiation and accessibility strategies that are based on research in the science of reading and the learning sciences along with the Newsela features that support their implementation.

Reading Text at an Appropriate Level
Research in the science of reading shows that reading texts at an appropriate level of complexity facilitates fluency, which frees up cognitive resources for comprehension and learning from text (LaBerge & Samuels, 1974; Rasinski, 2006). Texts for independent practice must be complex enough to challenge students, but not so complex as to cause undue frustration. With scaffolding, students can handle more complex texts. This scaffolding can come from a teacher or classmate, or from repeated opportunities to read the text (Pikulski & Chard, 2005).

Texts, Quizzes, and Write Prompts at an Appropriate Level with Newsela
Each article in Newsela is available at five levels of text complexity, providing an optimal level of challenge to promote growth in reading fluency and comprehension for all students. Accompanying quizzes and write prompts are also written at multiple levels of complexity to match the level of the text, providing differentiated support for demonstrating learning.

The original article represents the highest level of text complexity available, and Newsela editors moderate various features of text complexity to rewrite four additional versions of the text appropriate to lower grade levels, as described in the Adaptive Text Leveling in Newsela section. Students are matched to texts in Newsela in two ways: automatically or through teacher selection. Newsela defaults to a student's independent reading level using an algorithm primarily based on prior performance on either the comprehension questions that follow each Newsela text or the NWEA MAP® Growth™ assessment. Teachers can also choose to select and lock in a more challenging text level when they are available to scaffold instruction or when students are engaged in repeated readings of the same text at increasingly complex levels.

Translanguaging
Translanguaging is an instructional approach that encourages bi- and multilingual students to use all their languages in the service of learning rather than limiting them to English (Allman &

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Guethler, 2021). Providing texts in a student's native language values English learners' linguistic identity, enables them to learn subject-area content, and allows them to participate in class alongside English-speaking peers while developing their English language skills. Many teachers do not speak their students' home languages and would struggle to find appropriate resources, but technology-enhanced solutions can meet this need through translation. Translated texts can overcome some of the linguistic barriers to learning content and enable participation in collaborative activities that reinforce learning in English (Carhill-Poza, 2017). **In the U.S., 75 percent of the five million students classified as English learners have Spanish as their home language (National Center for Education Statistics, 2022), so having access to Spanish-language texts is particularly useful.**

Translanguaging in Newsela with English and Spanish Texts
Many Newsela articles are provided in both English and Spanish, giving **Spanish-speaking English learners access to instructional content so they can participate in classroom learning. Reading Newsela articles in Spanish also supports development and maintenance of Spanish literacy and language skills.** Spanish translations are available at five levels of text complexity to enable further differentiation among students who vary in their Spanish literacy skills.

Multimodal Resources and Read-Aloud Features
Providing resources in multiple modalities is another way teachers can differentiate access to content. **The brain processes visual and verbal information through separate channels, so dual coding— using both text and visuals in instructional materials—stimulates both channels and offers two ways to retrieve the information from long-term memory** (Weinstein et al., 2019). Dual coding enhances retention of information for all students and is a particularly effective instructional strategy for English learners and students with disabilities. Carhill-Poza (2017) found that using multimodal instructional materials supports English learners' development of conceptual understanding. Multimodal content such as videos visually demonstrates skills and concepts for English learners, and the ability to pause and rewind supports their understanding of the language and content. For students with disabilities and emerging readers, read-aloud tools can support their access to the content and enhance comprehension as they read along (Wood et al., 2018).

Multimodal Resources and Read-Aloud Features in Newsela
Multimedia gives students an alternative way to access instructional content. Newsela ELA's multimedia content includes videos as well as a host of other assets. Teachers can assign students a mix of resources to explore an issue from different angles. **Videos support oral language development and provide background knowledge for reading related texts.** Visual resources help students, particularly English learners, put meaning behind concepts and words. Ready-made graphic

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organizers guide students in visually representing the content and structure of text, scaffolding their comprehension.

A read-aloud feature is also available in all Newsela texts for emerging or struggling readers who are not yet able to read a text at the lowest level, or who may need help reading particularly challenging parts of the text at any level. Students can play, pause, and rewind the audio as they follow along with the text, which is highlighted word-by-word. The read-aloud feature is compatible with both English and Spanish text, so students can develop their oral language and comprehension skills in either language.

Small-Group Instruction and Peer Support
Small-group instruction with students who have similar learning needs is an efficient strategy for differentiating the learning process. Small-group instruction enables teachers to intensify the level of explicitness, support, and feedback in their instruction and leads to better comprehension outcomes for elementary (Dubé et al., 2013) and middle school students (Burns et al., 2011), as well as for struggling high school students (Kamil et al., 2008). Flexible groups that are regularly adjusted based on the results of frequent formative assessment are most effective for providing differentiated instruction that is targeted to students' changing needs (Ford, 2005).

Assigning work to pairs or groups of students who can build on one another's knowledge is an effective way to increase the amount of time students are engaged in supportive reading practice without requiring continual support from the teacher. Effective cooperative learning approaches include Peer-Assisted Learning Strategies (Fuchs et al., 1997; McMaster et al., 2006), which pairs higher- and lower-performing readers to work on fluency and comprehension skills, and Reciprocal Teaching, which begins with teacher-led small-group instruction in comprehension strategies and gradually releases the responsibility of implementing strategies to the students (Palinscar & Herrenkohl, 2002).

Small-Group Instruction and Peer Support with Newsela
Newsela's small-group assignment feature also allows teachers to assign differentiated learning experiences to pairs or groups of students. Teachers can use formative assessment data from the Binder to guide their grouping strategy. They may choose to create homogenous groups of students with similar skill needs for teacher-led instruction, or heterogeneous groups to promote peer-assisted learning. They may also choose to group students by interest, as guided by reading history data in the Binder.

Accessibility Features
Enabling all students to access learning materials, including students with disabilities, is a central goal of Universal Design for Learning (Meyer et al., 2014). Just as differentiated instructional approaches recognize that students vary in readiness to learn the prescribed curriculum, Universal Design for Learning recognizes that students vary in their ability to access traditional learning materials. Both approaches strive to design instruction that provides students with equitable access to the curriculum.

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Building assistive supports into the design of curricular materials using principles of Universal Design for Learning broadens access not only for students with disabilities, but for all students (Pisha & Coyne, 2001). For instance, while allowing users to adjust font size is beneficial to students with visual impairments, it also enables students with dyslexia as well as those without disabilities to better perceive the text and read faster (Rello & Baeza-Yates, 2017).

Technology-based curricular programs have great potential to support users with a wide range of accessibility needs due to their inherent interactivity; **unlike static texts, digital programs can be designed with supportive features that users can choose to apply as needed**.

The Web Content Accessibility Guidelines (WCAG) are international standards for making digital content accessible to all users, including people with disabilities (Web Accessibility Initiative, 2018). These guidelines have been incorporated into Section 508 of the Rehabilitation Act, a federal law requiring government agencies to comply with guidelines for assistive technologies.
The WCAG includes four success criteria. Content must be perceivable to all users. For example, visually impaired users should be able to change both text and non-text content into speech, and high-contrast colors should be used to ensure content is distinguishable. Digital tools must be *operable* from a keyboard for users who are unable to use a mouse or touchscreen. Content should be organized in an interface that is *understandable* to all users. It should be readable, offering a readability level that matches the user as well as support for understanding vocabulary and determining pronunciation. Content should also be predictable to facilitate understanding, using consistent placement of elements and simple language to guide navigation. Finally, it should be *robust*, or compatible with other assistive technologies such as screen readers.

Accessibility Features in Newsela
Newsela's platform is designed and developed using accessibility best practices with the goal of supporting all learners, regardless of their ability or use of assistive technology. Its accessibility features are WCAG 2.1 AA and Section 508 compliant, providing significant supports for students with disabilities.
Students can modulate the font size of the text, use a read-aloud feature which offers four play-back speeds, and listen to alternative text that describes the content of every image. Responsive web design principles are followed to ensure device orientation and screen magnification support. The Newsela interface is also designed to meet color contrast standards and avoid using color to convey meaning, and students can fully navigate Newsela using a keyboard. Text complexity can be modulated to meet the reading level of the student, and students can hover over Power Words underlined in the text to see or hear the word's definition and pronunciation. Teachers can also use the annotation feature to provide point-of-use guidance to students as they are reading.

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The Newsela interface uses consistent placement of elements across screens so they are easy to find, and menus and buttons use simple language to reduce the cognitive load of navigating the site. Article cards include the most relevant details for students, with a clear hierarchy of important information. Newsela also uses status updates to confirm certain actions across the platform, such as saving and removing content. The interface is compatible with screen readers, so students with visual impairments can access the content as well. Videos come with transcripts, closed captions, and audio descriptions so students with hearing or visual impairments can follow along.

Conclusion

Ensuring that students develop critical literacy skills and foundational content knowledge is essential to learning in school and beyond, yet many students struggle with literacy and lack the content knowledge necessary for engaging with increasingly complex academic texts and concepts. A lack of high-quality, diverse core curricular materials combined with a lack of research-based instructional approaches that address students' unique learning needs contributes to these outcomes. Supplemental programs that are grounded in the learning sciences and the science of reading can help fill these gaps. Newsela has been designed based on the learning sciences and the science of reading to foster the development of content knowledge and reading comprehension skills through high-interest, diverse, and relevant content that explores a range of topics and is offered at multiple reading levels. Newsela's explicit instructional guidance, frequent opportunities for formative assessment, and supportive features and scaffolds ensure that teachers can provide effective instruction and practice that meets students' unique learning needs.

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References

Achieve. (2014). *Rising to the challenge: Are high school graduates prepared for college and work*
https://www.achieve.org/rising-challenge-powerpoint

Ad Fontes Media. (n.d.). *Interactive media bias chart*. Retrieved June 16, 2023, from
https://adfontesmedia.com/interactive-media-bias-chart/

Afflerbach, P., Hurt, M., & Cho, B. Y. (2020). Reading comprehension strategy instruction. In D. L. Dinsmore, L. K.
Fryer, & M. M. Parkinson (Eds.), *Handbook of strategies and strategic processing* (pp. 98–118). Routledge.

Allen, I. E., & Seaman, J. (2017). *What we teach: K-12 school district curriculum adoption process, 2017*.
www.onlinelearningsurvey.com/oer.html

Alliance for Excellent Education. (2018). *Science of adolescent learning: Risk taking, rewards, and relationships*.
https://all4ed.org/publication/science-of-adolescent-learning-risk-taking-rewards-and-relationships/

Allington, R. L., McCuiston, K., & Billen, M. (2015). What research says about text complexity and learning to read.
The Reading Teacher, *68*(7), 491–501.

Allington, R. L., & McGill-Franzen, A. M. (2021). Reading volume and reading achievement: A review of recent
research. *Reading Research Quarterly*, *56*, 231–238.

Allman, K. R., & Guethler, A. (2021). Translanguaging using technology: Supporting translanguaging practices in
the middle school science classroom. *Science Scope*, *44*(4), 6–13.

American Psychological Association & Coalition for Psychology in Schools and Education. (2015). *Top 20
principles from psychology for PreK–12 teaching and learning*. http://www.apa.org/ed/schools/cpse/top-twenty-
principles.pdf

Applebee, A. N., Langer, J. A., Nystrand, M., & Gamoran, A. (2003). Discussion-based approaches to developing
understanding: Classroom instruction and student performance in middle and high school English. *American
Educational Research Journal*, *40*(3), 685–730.

Baddeley, A. (2000). The episodic buffer: A new component of working memory? *Trends in Cognitive Sciences*,
4(11), 417–423.

Barzilai, S., Zohar, A. R., & Mor-Hagani, S. (2018). Promoting integration of multiple texts: A review of
instructional approaches and practices. *Educational Psychology Review*, *30*(3), 973–999.

Beck, I. L., McKeown, M. G., & Kucan, L. (2013). *Bringing words to life: Robust vocabulary instruction* (2nd ed.).
The Guilford Press.

We're ready to support you. Let's talk!
newsela.com/contact

35

Beier, M. E., & Ackerman, P. L. (2005). Age, ability, and the role of prior knowledge on the acquisition of new domain knowledge: Promising results in a real-world learning environment. *Psychology and Aging*, *20*(2), 341–355.

Biancarosa, G., & Snow, C. E. (2006). *Reading next - A vision for action and research in middle and high school literacy: A report to the Carnegie Corporation of New York*. www.carnegie.org.

Bishop, R. S. (1990). Mirrors, windows, and sliding glass doors. *Perspectives*, *6*(3), ix–xi.

Blumberg, R. L. (2008). The invisible obstacle to educational equality: Gender bias in textbooks. *Prospects*, *38*(3), 345–361.

Bransford, J. D., & Johnson, M. K. (1972). Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Verbal Behavior*, *11*, 717–726.

Burns, M. K., Hodgson, J., Parker, D. C., & Fremont, K. (2011). Comparison of the effectiveness and efficiency of text previewing and preteaching keywords as small-group reading comprehension strategies with middle-school students. *Literacy Research and Instruction*, *50*(3), 241–252.

Butler, A. C., & Roediger, H. L. (2008). Feedback enhances the positive effects and reduces the negative effects of multiple-choice testing. *Memory and Cognition*, *36*(3), 604–616.

Cain, K., & Oakhill, J. (2011). Matthew Effects in young readers: Reading comprehension and reading experience aid vocabulary development. *Journal of Learning Disabilities*, *44*(5), 431–443.

Cantrell, S. C., Almasi, J. F., Carter, J. C., Rintamaa, M., & Madden, A. (2010). The impact of a strategy-based intervention on the comprehension and strategy use of struggling adolescent readers. *Journal of Educational Psychology*, *102*(2), 257–280.

Carhill-Poza, A. (2017). Re-examining English language teaching and learning for adolescents through technology. *System*, *67*, 111–120.

Catts, H. W. (2022). Rethinking how to promote reading comprehension. *American Educator*, *45*(4), 26–40.

Catts, H. W., Adlof, S. M., & Weismer, S. E. (2006). Language deficits in poor comprehenders: A case for the Simple View of Reading. *Journal of Speech, Language, and Hearing Research*, *49*, 278–293.

Chen, X. (2016). *Remedial coursetaking at U.S. public 2- and 4-year institutions: Scope, experience, and outcomes (NCES 2016-405). U.S. Department of Education.*

Chick, K. A. (2006). Gender balance in K-12 American history textbooks. *Social Studies Research and Practice*, *1*(3), 284–290.

We're ready to support you. Let's talk!
newsela.com/contact

36

Ciecierski, L. M., & Bintz, W. P. (2016). Paired texts: A way into the content area. *Middle School Journal*, *47*(4), 32–44.

Ciecierski, L. M., & Bintz, W. P. (2018). Tri-Texts: A potential next step for paired texts. *The Reading Teacher*, *71*(4), 479–483.

Clark, R., Allard, J., & Mahoney, T. (2004). How much of the sky? Women in American high school history textbooks from the 1960s, 1980s and 1990s. *Social Education, 68*(1), 57–63.

Cutting, L. E., & Scarborough, H. S. (2012). Multiple bases for comprehension difficulties: The potential of cognition and neurobiological profiling for validation of subtypes and development of assessments. In J. P. Sabatini, T. O'Reilly, & E. R. Albro (Eds.), *Reaching an understanding: Innovations in how we view reading assessment.* Rowman & Littlefield Education.

Day, S. B., & Goldstone, R. L. (2012). The import of knowledge export: Connecting findings and theories of transfer of learning. *Educational Psychologist*, *47*(3), 153–176.

Deckman, S. L., Fulmer, E. F., Kirby, keely, Hoover, K., & Mackall, A. S. (2018). Numbers are just not enough: A critical analysis of race, gender, and sexuality in elementary and middle school health textbooks. *Educational Studies*, *54*(3), 285–302.

D'Mello, S. K., & Mills, C. S. (2021). Mind wandering during reading: An interdisciplinary and integrative review of psychological, computing, and intervention research and theory. *Language and Linguistics Compass, 15*(4), Article e12412.

Dubé, F., Dorval, C., & Bessette, L. (2013). Flexible grouping, explicit reading instruction in elementary school. J*ournal of Instructional Pedagogies, 10*, 1–12.

Duke, N. K., & Pearson, P. D. (2009). Effective practices for developing reading comprehension. *The Journal of Education*, *189*(1/2), 107–122.

Edmonds, M. S., Vaughn, S., Wexler, J., Reutebuch, C., Cable, A., Tackett, K. K., & Schnakenberg, J. W. (2009). A synthesis of reading interventions and effects on reading comprehension outcomes for older struggling readers. *Review of Educational Research*, *79*(1), 262–300.

Ericsson, A., & Pool, R. (2016). *Peak: Secrets from the new science of expertise*. Houghton Mifflin Harcourt.

Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH, & DHHS. (2000). *Report of the National Reading Panel: Teaching children to read: Reports of the subgroups (00-4754).*

Fisher, D., & Frey, N. (2012). *Engaging the adolescent learner: Text-dependent questions*. International Reading Association. https://education.illinoisstate.edu/downloads/casei/4-02A-Engaging%20fisher.pdf

We're ready to support you. Let's talk!
newsela.com/contact

37

Ford, M. P. (2005). *Differentiation through flexible grouping: Successfully reaching all readers.*
   www.learningpt.org

Fuchs, D., Fuchs, L. S., Mathes, P. G., & Simmons, D. C. (1997). Peer-Assisted Learning Strategies: Making
   classrooms more responsive to diversity. *American Education Research Journal, 34*(1), 174–206.

Goldberg, M. (2016). *Classroom trends: Teachers as buyers of instructional materials and users of technology. K-12
   Market Advisors.*
   https://mdreducation.com/reports/classroom-trends-teachers-buyers-instructional-materials-users-technology/

Gonzalez, A. M., Steele, J. R., & Baron, A. S. (2017). Reducing children's implicit racial bias through exposure to
   positive out-group exemplars. *Child Development, 88*(1), 123–130.

Goulden, R., Nation, P., & Read, J. (1990). How large can a receptive vocabulary be? *Applied Linguistics, 11*(4),
   341–363.

Graham, S., & Hebert, M. (2011). Writing to read: A meta-analysis of the impact of writing and writing instruction
   on read. *Harvard Educational Review, 81*(4), 710–744.

Guthrie, J. T., Klauda, S. L., & Morrison, D. A. (2012). Motivation, achievement, and classroom contexts for
   information book reading. In J. T. Guthrie, A. Wigfield, & S. Lutz Klauda (Eds.), *Adolescents' engagement in
   academic literacy* (pp. 1–51). University of Maryland.

Guthrie, J. T., Wigfield, A., Barbosa, P., Perencevich, K. C., Taboada, A., Davis, M. H., Scafiddi, N. T., & Tonks, S.
   (2004). Increasing reading comprehension and engagement through concept-oriented reading instruction.
   Journal of Educational Psychology, 96(3), 403–423.

Hattie, J., Crivelli, J., Van Gompel, K., West-Smith, P., & Wike, K. (2021). Feedback that leads to improvement in
   student essays: Testing the hypothesis that "where to next" feedback is most powerful. *Frontiers in
   Education, 6*.

Hiebert, E. H. (2012). The Common Core State Standards and text complexity. *Teacher Librarian, 39*(5), 13–19.

Hiebert, E. H., Samuels, S. J., & Rasinski, T. V. (2015). Comprehension-based silent reading rates: What do we
   know? What do we need to know? In E. H. Hiebert (Ed.), *Teaching stamina and silent reading in the
   digital-global age* (pp. 147–168). TextProject, Inc.

Hirsch, E. D. (2006). Building knowledge: The case for bringing content into the language arts block and for a
   knowledge-rich curriculum core for all children. *American Educator, 30*(1), 8–51.

Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading and Writing: An Interdisciplinary
   Journal, 2,* 127–160.

We're ready to support you. Let's talk!
newsela.com/contact

38

Intercultural Development Research Association. (2016). *Forms of bias in textbooks and instructional materials.* https://www.idra.org/equity-assistance-center/forms-bias-textbooks-instructional-materials/

Kamil, M. L., Borman, G. D., Dole, J., Kral, C. C., Salinger, T., & Torgesen, J. (2008). *Improving adolescent literacy: Effective classroom and intervention practices: A practice guide (NCEE# 2008-4027).* https://ies.ed.gov/ncee/wwc/practiceguide/8

Kamil, M. L., & Hiebert, E. H. (2005). The teaching and learning of vocabulary: Perspectives and persistent issues. In E. H. Hiebert & M. Kamil (Eds.), *The teaching and learning of vocabulary* (pp. 1–23). Lawrence Erlbaum.

Keene, E. O., & Zimmermann, S. (1997). *Mosaic of thought: Teaching comprehension in a reader's workshop.* Heinemann.

Kintsch, W. (1988). The role of knowledge in discourse comprehension: A construction-integration model. *Psychological Review*, *95*(2), 163–182.

Kintsch, W. (2012). Psychological models of reading comprehension and their implications for assessment. In J. P. Sabatini, E. Albro, & T. O'Reilly (Eds.), *Measuring up: Advances in how we assess reading ability* (pp. 21–38). Rowman & Littlefield Education.

Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: An analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, *41*(2), 75–86.

LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing in reading. *Cognitive Psychology*, *6*(2), 293–323.

Lescarret, C., Magnier, J., Le Floch, V., Sakdavong, J.-C., Boucheix, J.-M., Tricot, A., & Amadieu, F. (2023). Expert but not persuasive: Middle school students' consideration of source in the processing of conflicting videos. *Journal for the Study of Education and Development*, *46*(2), 285–321.

Liu, Z. X., Grady, C., & Moscovitch, M. (2017). Effects of prior-knowledge on brain activation and connectivity during associative memory encoding. *Cerebral Cortex*, *27*(3), 1991–2009.

Mancevice, N., & Herman, J. L. (2016). *Reading across texts: A resource for planning multiple source comprehension tasks.* Center on Standards and Assessments Implementation.

McKenna, M. C., Conradi, K., Lawrence, C., Gee Jang, B., & Meyer, P. J. (2012). Reading attitudes of middle school students: Results of a U.S. survey. *Reading Research Quarterly*, *47*(3), 283–306.

McMaster, K. L., Fuchs, D., & Fuchs, L. S. (2006). Research on peer-assisted learning strategies: The promise and limitations of peer-mediated instruction. *Reading and Writing Quarterly*, *22*(1), 5–25.

We're ready to support you. Let's talk!
newsela.com/contact

39

Metametrics. (2022). *Determine the reading level of a text*. https://lexile.com/educators/tools-to-support-reading-at-school/tools-to- determine-a-books-complexity/the-lexile-analyzer/

Meyer A., Rose D.H., and Gordon D. (2014) Universal Design for Learning: Theory and practice. Wakefield, MA: CAST.

Miller, G. A. (1956). The magical number seven, plus or minus two: some limits on our capacity for processing information. *The Psychological Review*, *63*, 81–97.

Mucherah, W., & Yoder, A. (2008). Motivation for reading and middle school students' performance on standardized testing in reading. *Reading Psychology*, *29*(3), 214–235.

Murphy, P. K., Wilkinson, I. A. G., Soter, A. O., Hennessey, M. N., & Alexander, J. F. (2009). Examining the effects of classroom discussion on students' comprehension of text: A meta-analysis. *Journal of Educational Psychology*, *101*(3), 740–764.

National Academies of Sciences, Engineering, and Medicine. (2019). *The promise of adolescence: Realizing opportunity for all youth*. The National Academies Press.

National Association of Colleges and Employers. (2022). *Job outlook 2023*. https://www.naceweb.org/store/2022/job-outlook-2023/

National Center for Education Statistics. (2022). English Learners in public schools. *Condition of education.* U.S. Department of Education, Institute of Education Sciences. https://nces.ed.gov/programs/coe/indicator/cgf

National Center for Education Statistics. (2023a). Racial/ethnic enrollment in public schools. *Condition of education.* U.S. Department of Education, Institute of Education Sciences. https://nces.ed.gov/programs/coe/indicator/cge

National Center for Education Statistics. (2023b). Students with disabilities. *Condition of education.* U.S. Department of Education, Institute of Education Sciences. https://nces.ed.gov/programs/coe/indicator/cgg

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common core state standards for English language arts & literacy in history/social studies, science, and technical subjects. Appendix A: Research supporting key elements of the standards*.

Palinscar, A. S., & Herrenkohl, L. R. (2002). Designing collaborative learning contexts. *Theory into Practice*, *41*(1), 26–32.

Pellegrino, J. W. (2014). Assessment as a positive influence on 21st century teaching and learning: A systems approach to progress. *Psicologia Educativa*, *20*(2), 65–77.

We're ready to support you. Let's talk!
newsela.com/contact

40

Pikulski, J. J., & Chard, D. J. (2005). Fluency: Bridge between decoding and reading comprehension. *The Reading Teacher*, *58*(6), 510–519.

Pisha, B., & Coyne, P. (2001). Smart from the start: The promise of universal design for learning. *Remedial and Special Education*, *22*(4), 197–203.

Pittman, P., & Honchell, B. (2014). Literature discussion: Encouraging reading interest and comprehension in struggling middle school readers. *Journal of Language and Literacy Education*, *10*, 118–133.

Porter-O'Donnell, C. (2004). Beyond the yellow highlighter: Teaching annotation skills to improve reading comprehension. *English Journal*, *93*(5), 82–89.

Rasinski, T. V. (2006). A brief history of reading fluency. In S. J. Samuels & A. E. Farstrup (Eds.), *What research has to say about fluency instruction* (pp. 4–23). International Reading Association.

Rasinski, T. V., Samuels, S. J., Hiebert, E. H., Petscher, Y., & Feller, K. (2015). The relationship between a silent reading fluency instructional protocol on students' reading comprehension and achievement in an urban school setting. In E. H. Hiebert (Ed.), *Teaching stamina and silent reading in the digital-global age* (pp. 100–120). TextProject, Inc.

Recht, D. R., & Leslie, L. (1988). Effect of prior knowledge on good and poor readers' memory of text. *Journal of Educational Psychology*, *80*(1), 16–20.

Rello, L., & Baeza-Yates, R. (2017). How to present more readable text for people with dyslexia. *Universal Access in the Information Society*, *16*(1), 29–49.

Reutzel, D. R., Smith, J. A., & Fawson, P. C. (2005). An evaluation of two approaches for teaching reading comprehension strategies in the primary years using science information texts. *Early Childhood Research Quarterly*, *20*(3), 276–305.

Roediger, H. L., & Marsh, E. J. (2005). The positive and negative consequences of multiple-choice testing. *Journal of Experimental Psychology: Learning Memory and Cognition*, *31*(5), 1155–1159.

Roediger, H. L., Putnam, A. L., & Smith, M. A. (2011). Ten benefits of testing and their applications to educational practice. In J. Mestre & B. Ross (Eds.), *Psychology of learning and motivation: Cognition in education* (Vol. 55, pp. 1–36). Elsevier.

Ryan, R. M., & Deci, E. L. (2000). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology*, *25*(1), 54–67.

Sadker, M., & Sadker, D. M. (1982). *Sex equity handbook for schools*. Longman Publishing Group.

Sawyer, R. K. (2022). *The Cambridge handbook of the learning sciences* (3rd ed.). Cambridge University Press.

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41

Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). Guilford Press.

Schiefele, U., Schaffner, E., Möller, J., Wigfield, A., Nolen, S., & Baker, L. (2012). Dimensions of reading motivation and their relation to reading behavior and competence. *Reading Research Quarterly, 47*(4), 427–463.

Scott, J. A. (2005). Creating opportunities to acquire new word meanings from text. In E. H. Hiebert & M. L. Kamil (Eds.), *Teaching and learning vocabulary: Bringing research to practice* (pp. 69–94). Lawrence Erlbaum Associates, Inc.

Shanahan, T. (2020). Limiting children to books they can already read: Why it reduces their opportunity to learn. *American Educator, 44*(2), 13–17.

Shanahan, T., Callison, K., Carriere, C., Duke, N. K., Pearson, P. D., Schatschneider, C., & Torgesen, J. (2010). *Improving reading comprehension in kindergarten through 3rd grade: A practice guide (NCEE 2010-4038).*

Shanahan, T., Fisher, D., & Frey, N. (2012). The challenge of challenging text. *Educational Leadership, 69*(6), 58–62.

Soalt, J. (2005). Bringing together fictional and informational texts to improve comprehension. *The Reading Teacher, 58*(7), 680–683.

Sousa, D. A., & Tomlinson, C. A. (2018). *Differentiation and the brain: How neuroscience supports the learner-friendly classroom* (2nd ed.). Solution Tree Press.

Stanovich, K. E. (1986). Matthew Effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly, 21*(4), 360–407.

Strommen, L. T., & Mates, B. F. (2004). Learning to love reading: Interviews with older children and teens. *Journal of Adolescent & Adult Literacy, 48*(3), 188–200.

Subban, P. (2006). Differentiated instruction: A research basis. *International Education Journal, 7*(7), 935–947.

Swanborn, M. S. L., & De Glopper, K. (1999). Incidental word learning while reading: A meta-analysis. *Review of Educational Research, 69*(3), 261–285.

Sweller, J. (2008). Cognitive Load Theory and the Use of Educational Technology. *Educational Technology, 48*(1), 32–35.

Sweller, J., Ayres, P., & Kalyuga, S. (2011). *Cognitive load theory*. Springer.

The Reading League. (2022). *Science of reading: Defining guide.* https://www.thereadingleague.org/what-is-the-science-of-reading/39

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42

Torgesen, J. K., Houston, D. D., Rissman, L. M., Decker, S. M., Roberts, G., Vaughn, S., Wexler, J., Francis, D. J., Rivera, M. O., & Lesaux, N. (2007). *Academic literacy instruction for adolescents: A guidance document from the Center on Instruction.* www.centeroninstruction.org.

Unrau, N., & Schlackman, J. (2006). Motivation and its relationship with reading achievement in an urban middle school. *The Journal of Educational Research, 100*(2), 81–101.

U.S. Department of Education, Institute of Education Sciences, & National Center for Education Statistics. (2019a). *National Assessment of Educational Progress (NAEP) 2019 Grade 12 Mathematics and Reading Assessments.*

U.S. Department of Education, Institute of Education Sciences, & National Center for Education Statistics. (2019b). *National Assessment of Educational Progress (NAEP) 2019 Science Assessment.*

U.S. Department of Education, Institute of Education Sciences, & National Center for Education Statistics. (2022a). *National Assessment of Educational Progress (NAEP) 2022 Grade 8 Civics Assessment.*

U.S. Department of Education, Institute of Education Sciences, & National Center for Education Statistics. (2022b). *National Assessment of Educational Progress (NAEP) 2022 Grade 8 U.S. History Assessment.*

U.S. Department of Education, Institute of Education Sciences, & National Center for Education Statistics. (2022c). *National Assessment of Educational Progress (NAEP) 2022 Reading Assessment.*

Valli, L., & Buese, D. (2007). The changing roles of teachers in an era of high-stakes accountability. *American Educational Research Journal, 44*(3), 519–558.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes* (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.). Harvard University Press.

Wang, M. T., & Eccles, J. S. (2012). Social support matters: Longitudinal effects of social support on three dimensions of school engagement from middle to high school. *Child Development, 83*(3), 877–895.

Web Accessibility Initiative. (2018). *How to meet WCAG 2.1 (Web Content Accessibility Guidelines):Quick reference.* https://www.w3.org/WAI/WCAG21/quickref/

Weinstein, Y., Sumeracki, M., & Caviglioli, O. (2019). *Understanding how we learn: A visual guide.* Routledge.

Whitley, J., Gooderham, S., Duquette, C., Orders, S., & Cousins, J. B. (2019). Implementing differentiated instruction: A mixed-methods exploration of teacher beliefs and practices. *Teachers and Teaching, 25*(8), 1043–1061.

Wigfield, A., Eccles, J. S., Roeser, R. W., & Schiefele, U. (2008). Development of achievement motivation. In W. Damon & R. M. Lerner (Eds.), *Child and adolescent development: An advanced course* (pp. 406–436). John Wiley & Sons, Inc.

We're ready to support you. Let's talk!
newsela.com/contact

43

Wiliam, D. (2011). What is assessment for learning? *Studies in Educational Evaluation*, *37*, 3–14.

Willingham, D. T. (2017). *The reading mind: A cognitive approach to understanding how the mind reads.* Jossey-Bass.

Wolfe, M. B. W., & Goldman, S. R. (2005). Relations between adolescents' text processing and reasoning. *Cognition and Instruction*, *23*(4), 467–502.

Wood, S. G., Moxley, J. H., Tighe, E. L., & Wagner, R. K. (2018). Does use of text-to-speech and related read-aloud tools improve reading comprehension for students with reading disabilities? A meta-analysis. *Journal of Learning Disabilities*, *51*(1), 73–84.

Woyshner, C., & Schocker, J. B. (2015). Cultural parallax and content analysis: images of black women in high school history textbooks. *Theory and Research in Social Education*, *43*(4), 441–468.

Wright, T. S., & Cervetti, G. N. (2017). A systematic review of the research on vocabulary instruction that impacts text. *Reading Research Quarterly*, *52*(2), 203–226.

Zywica, J., & Gomez, K. (2008). Annotating to support learning in the content areas: Teaching and learning science. *Journal of Adolescent & Adult Literacy*, *52*(2), 155–164.

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About the Author

Kathleen Richards is a Senior Learning Scientist who specializes in literacy and language development. She has extensive experience with designing and evaluating literacy and language assessments and curricula to support teachers in delivering high-quality, research-based instruction. She has led research and development on assessment and instruction for both technology-enhanced and print-based language and literacy education programs. Her work emphasizes integrating the science of reading and learning sciences principles into engaging and effective teaching and learning experiences. Kathleen holds a master's degree in Linguistics from the Graduate Center at the City University of New York and a bachelor's degree in Psychology from New York University.

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