



Learning Sciences Research Foundations

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Overview

Newsela is an online adaptive, Instructional Content Platform used by more than 29 million students and 2 million teachers in U.S. classrooms. Newsela aims to improve motivation, learning strategies, engagement, vocabulary, and comprehension outcomes for students in grades 2-12 by uniting high-interest content at multiple reading levels with accompanying assessments and reading activities that share insights designed for teachers and learners.

Newsela partners with the most trusted names in publishing to bring engaging authentic content into schools everywhere by publishing up to ten articles each weekday. Each article is modified to be readable at five reading levels, based on lexile, so that all students in a class can read the same content. Each article has an associated quiz and questions are aligned to the Common Core ELA Standards, thereby assuring district administrators that the content is appropriate while also saving teachers valuable time in finding instructional content.

Newsela integrates with the Learning Management Systems most often used by schools and districts, so sign in and rostering are seamless. Teachers, school leaders, and district administrators can track students' progress in real-time and over the course of the school year.

Overall, the primary goal of Newsela is to provide educators with high-quality authentic content and the instructional tools they need, all in one location, to drive students' academic engagement and learning. Newsela offers research-based guidance on the utility of the tools, but is not prescriptive in their use, thus allowing teachers instructional autonomy in their classrooms. Rather, we provide a flexible platform that is intended to streamline and organize content, instructional tools, and student progress tracking.

All of the primary product features were developed using a research foundation in learning sciences centered on student motivation, learning strategies, engagement, and learning as described in this report.

Newsela Online Instructional Content Platform

Motivation and Learning Strategies

The foundation for our work draws from two areas of learning sciences research: student motivation and learning strategies. There is evidence that these factors are both strongly related to academic achievement and also malleable--they can be improved to drive positive student outcomes (Farrington, Roderick, Allensworth, Nagaoka, Keyes, Johnson, & Beechum, 2012). Below we break out our research foundations along these two lines.

Student motivation for reading is the precursor for reading engagement (spending time reading) which in turn must occur before we can see improvements in reading comprehension (Appleton, Christenson, & Reschly, 2006; Farrington et al., 2012). Motivation is internal and unobservable; we can only determine students' underlying motivations by asking them. Engagement is the behavioral manifestation of motivation--doing the actual work of schooling such as reading a text. Academic performance, such as reading comprehension, can only occur if students are actively engaged in learning; the correlation between academic engagement and achievement is one of the most enduring and consistent findings in educational research (Gettinger, Ball, Thomas, & Grimes, 2007).

Motivation and engagement are very broad fields, each with many theoretical frameworks and associated research. As such, a summary of the research is beyond the scope of this paper. Instead, we highlight the research that most directly applies to our product which includes interest, autonomy, belonging, and self-efficacy. We also recognize that there may be important aspects of reading motivation and engagement that are not included in our set of product features, and encourage educators to encompass those factors into their instruction.

Learning strategies also play a role in academic engagement and there are a variety of learning strategies that students can utilize to improve academic performance including metacognition, self-regulated learning, time management, goal setting, and study skills (Farrington et al., 2012). There is a reciprocal relationship between use of learning strategies with other noncognitive factors such as self-efficacy whereby students with strong learning strategies tend to "make students' academic behaviors more productive and effective, contributing to improved academic performance. As a result, learning strategies tend to increase students' self-efficacy (the "I can succeed at this" mindset), which in turn is related to increased academic perseverance when schoolwork gets challenging." (Farrington et al., 2012, p 39). Similarly, if students do not know how to study or organize their homework, they are less likely to engage in the task and therefore less likely to be successful academically.

Newsela Product Features

Curated Content

Each day, our editors review new content options across a wide range of news and nonfiction partners. We source with an eye toward timely, engaging stories that will be relevant to both students and their teachers, and aim to vary our coverage across subjects and subject areas each day. When sourcing for a particular subject area, we may do a more focused search within our partner content to find articles that make real-world connections to the concepts and standards students are learning in the classroom.

Newsela also publishes three types of collections. First, we publish specific Custom Collections commissioned by districts and schools. Second, we publish Curriculum Complements in partnership with curriculum providers and other education institutions. These Curriculum Complements that Newsela creates help to fill gaps identified by Newsela and the partner based on user insights and content needs. Third, we publish Newsela collections in response to user needs that we hear from our users and the market. Examples of these include off-the-shelf organized content collections such as U.S. History for Middle School, an ELA Novel Studies Collection, and Newsela SEL.

Newsela encourages educators to allow students to choose the articles that they want to read whenever possible. In addition, we facilitate that opportunity for choice through the provision of Text Sets wherein the teacher defines a group of articles within which the student can choose to read. Within text-sets, students can choose to explore topics of interest such as reading lists by state, by literature books, or by subtopic areas such as First Amendment, Branches of the Government, and The Women's Rights Movement.

Newsela content is also selected for content coverage across standards and subject areas, so that teachers and administrators have confidence that what they read is aligned. Content is similarly selected to build student motivation through research-based focus on interest, belonging, and autonomy.

Basis in Learning Science:

- Motivation tends to decline over the course of the academic year, and over the course of schooling (higher in lower grades and declines through high school, with the strongest decline observed among struggling students (Gottfried, 1985; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002; Kamil, Borman, Dole, Kral, Salinger, & Torgeson, 2008; Kosovich, Flake, & Hulleman, 2017; Lepper, Corpus, & Iyengar, 2005; Scherrer, & Preckel, 2019).

- Struggling adolescents are more likely to engage in reading and learning when the content is shown to be related to their own lives, when the text makes a real-world connection to their concerns and interest, or when they are interested in the content (Guthrie, 2008; Kamil et al., 2008).
- To promote students' motivation to engage in literacy activities, instructional strategies that spark students' initial interest can serve as a hook to create long-term, personal interest (Kamil et al., 2008; Hidi & Renninger; 2006).
- Students are more likely to be academically engaged when they feel like they belong, which includes having caring and supportive relationships with adults and peers at school, receiving encouragement, a lack of social rejection and exclusion, and identification with values and goals (National Research Council, 2004; Walton & Cohen, 2007; Walton & Cohen 2011).
- Giving choice in their academic work results in higher intrinsic motivation, perceived competence, and academic achievement (Deci & Ryan, 2000; Hulleman, Barron, Kosovich, & Lazowski, 2016).

Leveled Reading

Each article in Newsela is modified to be readable at five reading levels based on lexile so that all students in a class can read the same content. Students see articles at the highest available reading level that doesn't exceed their current reading level. Students start off with a reading level equal to their grade level, which is determined by the grade of the class that they join on Newsela. Every time a student submits a quiz, the Newsela algorithm adjusts their reading level based on everything we know about the article, the student, and the quiz questions. The most important factors are their current Newsela reading level, how they did on the quiz questions, how recently quizzes were taken, and the difficulty level of those questions.

Basis in Learning Science:

- One of the big drivers in student motivation is their expectancy for success--do they think they can succeed at the academic task at hand (Hulleman et al., 2016)? By allowing students and their teachers to adjust the reading level of the instructional text, students are likely to experience more success in reading comprehension which in turn should boost their sense of competence and self-efficacy (Bandura, 1997).

- According to Flow Theory (Csikszentmihalyi, 1990) students are optimally motivated when their perceived level of skill matches the perceived challenge in a situation. In contrast, maladaptive motivational states occur when skill and challenge are mismatched (Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003).
- When all students in a class can read the same materials, at a level that is right for them, they are also likely to feel a stronger sense of belonging in class compared to when they either are given different texts adjusted for their reading level or given the same text that is too hard for them to comprehend (Harvey & Schroder, 1963; Oyserman, Bybee, & Terry, 2006).

Power Words

Newsela has a vocabulary instruction tool called Power Words which provides students with a yearlong vocabulary routine that supports exposure to high frequency, Tier II vocabulary in a meaningful context, using student-friendly definitions and low-stakes practice activities to reinforce understanding. Through Power Words, readers are exposed to student-friendly definitions and pronunciations for three to five essential words per article that are relevant to the key ideas of the article and are likely to appear in future texts for repeated exposure. Once students have been exposed to the definition of words in the context of the article, they complete two simple activities on each of the three to five words. Each activity is a quick, low-stakes multiple-choice question that provides the student with an additional exposure to the Power Words and a chance to assess their understanding of the meanings of words in a new context. Each word they have practiced is collected on their Word Wall, where they can revisit words with definitions as needed. Teachers see student and class progress through their own custom view of the Word Wall and can easily review any student's individual work.

Basis in Learning Science:

- If students encounter unfamiliar vocabulary words consistently while reading a text, their comprehension will suffer, however providing vocabulary instruction will not guarantee comprehension (NRTAC, 2010)
- Explicit instruction in vocabulary--direct instruction in word meaning--is shown to have a significant effect on vocabulary knowledge, and sometimes on comprehension although more research is needed to demonstrate this connection (Kamil et al., 2008).
- We hypothesize that the use of the power words tool will also help build students sense of competence and self-efficacy for reading as the text becomes more comprehensible (Bandura, 1997).

Quizzes

Each level of each article on Newsela has a unique quiz with items aligned to Common Core Anchor Reading Standards. These items provide students practice with a comprehensive range of language forms and functions, including describing cause and effect, interpreting and making connections between ideas, expressing and supporting opinions, vocabulary in context, sentence structure, and more.

Basis in Learning Science:

- The research on reading comprehension is extensive and has demonstrated a number of different strategies that are effective for student understanding (Kamil et al., 2008). While none of the strategies are found to be better than others (e.g., asking and answering questions, finding the main idea, summarizing, draw inferences, using graphic organizers), the use of multiple strategies results in more learning than the use of just one (National Reading Panel, 2000). The strategies may be especially useful for passive readers, those whose eyes sometimes glaze over the words on the page because they are not actively processing the meaning of what they are reading. Instruction in the application of comprehension strategies can help these students become active readers.
- Direct and explicit instruction of reading comprehension is effective in improving achievement (Kamil et al., 2008) and involves explaining and modeling strategies for reading a text.
- When students take quizzes on articles at their right reading level, they should experience more success which is related to feelings of competence and self-efficacy (Bandura, 1997).
- According to Flow Theory (Csikszentmihalyi, 1990) students are optimally motivated when their perceived level of skill matches the perceived challenge in a situation. In contrast, maladaptive motivational states occur when skill and challenge are mismatched (Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003).

Annotations

On Newsela, students and teachers have access to annotation tools within each article that allow teachers to model appropriate annotation practice while demonstrating and encouraging strong active reading practices. Teachers can use these annotation tools for various purposes in support of personalized learning. For example, teachers might ask students to highlight both the central idea and supporting detail or ask them to summarize each paragraph of the text as a check for understanding. Teachers can annotate the articles themselves and share their annotations with students, conducting private and targeted discussions within the context of a reading passage with individual students to support the wide range of learners in their classroom.

Write Prompts

Newsela allows for teachers to make use of built-in writing prompts, or to write their own, that lets students write responses to the article they have read. Newsela's write prompts have been designed in conjunction with Columbia Teachers College and serve as a way for students to respond to or summarize their reading as well as flag areas that they may not understand.

Basis in Learning Science:

- Providing direct and explicit reading comprehension strategies such as summarizing, asking and answering questions, paraphrasing, and finding the main idea is demonstrated to improve student outcomes (Kamil et al., 2008).
- Metacognitive strategies that involve awareness, monitoring, and regulating are also important. Specifically, these strategies help the reader determine whether or not they are comprehending the text. Write prompts and annotations allow teachers to scaffold the use of important learning strategies such as rereading, backward and forward search strategies, self-questioning, contrasting textual information with prior knowledge, and comparing main ideas with each other and with details from the text (Farrington et al., 2012).
- Write prompts and annotations both allow for a form of reciprocal teaching which is essentially a dialog between teacher and students that involves summarization of the text, question generation, clarification, and predictions about what will next occur in the passage that promotes enhanced learning through the direct teaching of these metacognitive strategies (Palincsar & Brown 1984).

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