

The Comprehension Connection: Fluency

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The Comprehension Connection: Fluency

1. Why is fluency so important?
2. What makes fluency interventions so necessary?
3. Which middle-grade through high school students need text-based fluency interventions?
4. What are the features of effective text-based fluency interventions?
5. What evidence is there that text-based fluency interventions make a difference?

1. Why is fluency so important?

- Buck & Torgesen (2004; www.fcrr.org)
Oral Reading Fluency (ORF) & FCAT: $r = .70$
- Good, Simmons, & Kame'enui (*Scientific Studies of Reading*, 2001) ORF & Oregon Statewide Assessment: $r = .67$
- 65% of Florida's 10th graders performed below grade level on FCAT; Text reading fluency accounted for 32% of the variance in 10th graders' FCAT scores (Schatschneider et al., 2004)

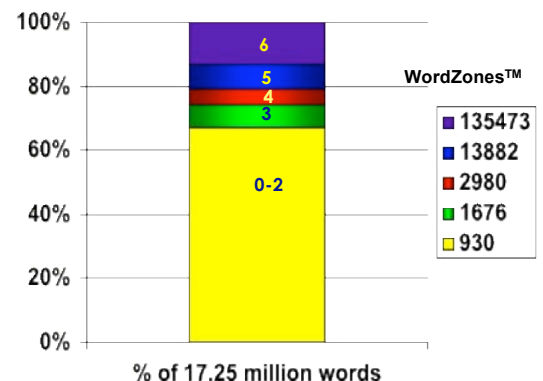
1. Why is fluency so important?

ANSWER: Fluency is the ability to read the majority of the words in a text automatically and with sufficient speed so that attention can be directed at the meaning of the text. Automatic/fluent reading is the foundation of proficient comprehension.

2. What makes text-based fluency interventions so necessary?

2a. Mismatch between typical texts & proficiencies of students who depend on schools to become literate

Words in American Schoolbooks



Zeno et al., 1995

3 consecutive texts: Beginning of 3rd trimester Gr. 1 (One of nation's leading core reading programs)

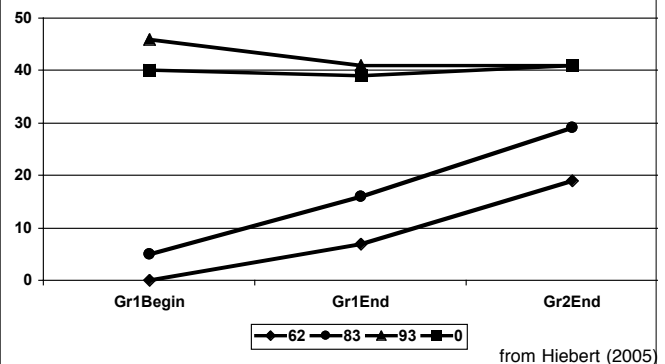
Soon the **elephants** came, four by four. They **thundered** *loud* and *shook* the ground. A **GAZELLE** passed. He was not *slow* like the **turtle**, but quick and fast.

A **rhinoceros** **darted** out of the **bushes**. He **grunted** at **Baboon**. **Baboon** was *afraid*. He will not *hurt* you," said his mother.

Mole and **Fox** **braided** grass into a long *rope* and waited for a **crecident** moon to *appear*. Then **Fox** **twirled** the *rope* high over his head. **Clunk**. It fell down and *hit* him right on the *nose*. **Fox** **growled**; he was **mad**. "Maybe the birds would carry our *rope*," said Mole.

POPPLETON **propped** up some **pillows** and read a few pages. The **SALESLADY** looked at her watch. "Do you want to buy the bed?" she asked **POPPLETON**. "I don't know yet," said **POPPLETON**. "Do you have any **crackers**?" The **SALESLADY** brought **POPPLETON** some **crackers**. He got **crumbs** *everywhere*. "Do you want the bed?"

Instructional Texts for Beginning Readers: Singletons & Repetition

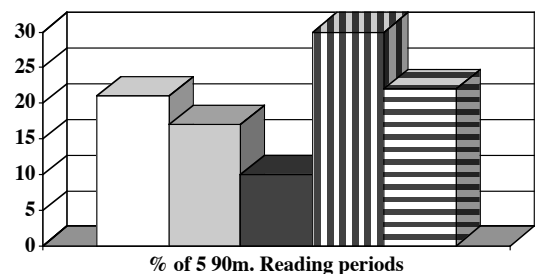


2b. Amount students are reading

Length of Instructional Block	Time with eyes on text	% of entire Reading block spent with eyes on text
90-minute	17.57	20
100-minute	16.25	16
105-minute	18.49	18
120-minute	19.25	16
Overall	18.33	17.5

(Brenner, Hiebert, & Tompkins, in press)

Amount of time allocated to reading in a basal reading program (©2007)

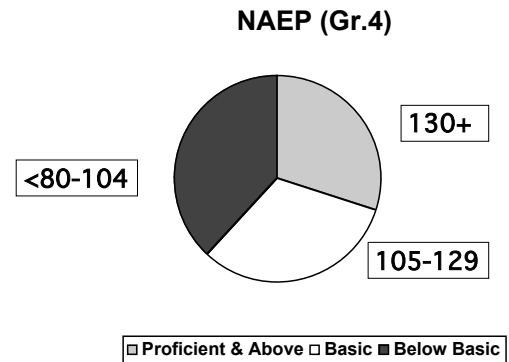


Reading
 Oral Language
 Writing
 Word Work
 Talking about Reading

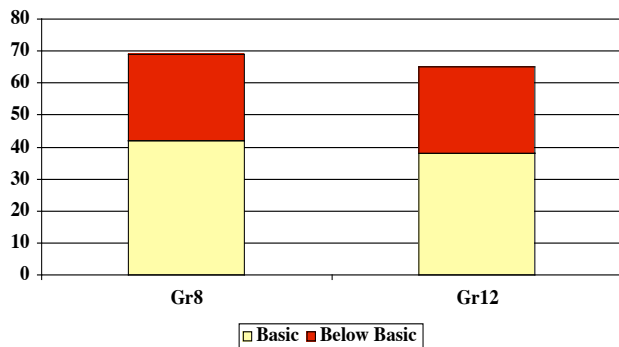
2. What makes text-based fluency interventions so necessary?

ANSWER: There is a substantial mismatch between current texts & proficiency of students in the 40th percentile and below. The amount that students read in school is not sufficient for those who depend on schools for literacy learning to become proficient readers.

3. Which students need text-based fluency interventions?



National Assessment of Educational Progress (2005)

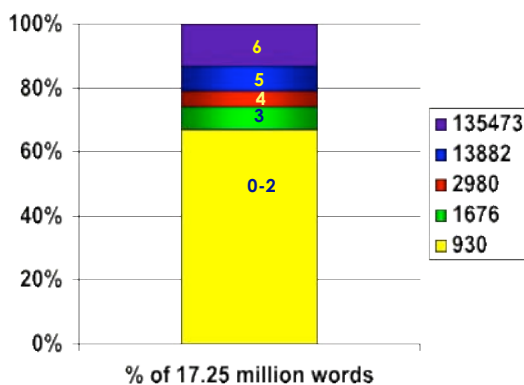


3. Which students need text-based fluency interventions?

ANSWER: Approximately two-thirds of an age cohort can use additional opportunities to become more fluent in reading texts with the most frequent words in written English.

4. What are the features of an effective text-based intervention?

Words in American Schoolbooks WordZones™



4.1 Repetition of "high-leverage" vocabulary: Fluency Curriculum

Level A	300 most frequent words; short and long vowels
Level B	600 most frequent words; short, long and r controlled vowels
Level C	1000 most frequent words; all monosyllabic words
Level D	1000 most frequent words; monosyllabic words; two-syllable words with regular vowel patterns
Level E	2,500 most-frequent words (plus monosyllabic words)
Level F	5,000 most frequent words (plus monosyllabic words)

Level B

Making Movies

You've probably seen many movies, so you know that movies can be about many different things. Sometimes writers **create** an idea for a movie. At other times, ideas for movies come from books.

Any kind of book can be used to make a movie. Some books may tell stories the writer created. Others may be about real people and places.


When a movie is based on a book, movie-makers decide how closely to follow the book. They decide how the people and places in the book will look and which parts of the story they will show.

Making *fantasy* real

Some movies are based on fantasy books. In fantasy books, writers imagine a world of people and places that are not real. It is the job of the movie-makers to show the world that the writer imagined.

When the three Lord of the Rings books were made into movies, it took about 300 different sets to show the fantasy world the writer had imagined. Although the books were more than 1000 pages long, the three movies ran for about 11 hours. That means that the movie-makers had to show only the most important parts of the books.

From Book to Movie



Showing Ideas and Feelings

Writers tell what people are thinking. However, when books are turned into movies, actors must show people's thoughts."

book *To Kill a Mockingbird* which was written by Harper Lee, was about a town in which white people were unfair to African Americans. *To Kill a Mockingbird* was made into a movie in 1962."

In her book, Harper Lee told how some white people in a town felt about African Americans. In the movie, actors showed these feelings. The difference between the book and the movie is that the book told about unfairness while the movie showed it."

Fast Facts

- In its first year, more than 2,000,000 copies of *To Kill a Mockingbird* were sold.
- *To Kill a Mockingbird* is the only book the writer Harper Lee ever published.
- The book gets its name from a person's warning: "It's a sin to kill a mockingbird."

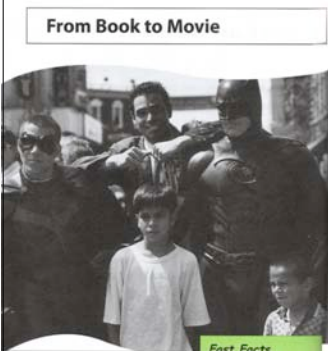
Actors show people's thoughts.

KEY NOTES

Showing Ideas and Feelings What is the difference between telling about people's thoughts and showing them?

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From Book to Movie



From Comics to Movies

Many people love reading about brave comic book characters like Batman. The first Batman comic book was printed in 1939. Since then, many movies have been made about this comic book character."

The difference between comic books and movies is that movies show comic book characters as living people, not drawings on a page. Actors can show more feelings than drawings can. Movies can also show actors doing things that look real, like Batman speeding through the air in a flying car. Comic books, though, cost less and can be read at any time and anywhere."

Fast Facts

- In 1962, *Batman* and *Superman* turned up in a comic book.
- *Batman* was made into a TV show in the 1960s.
- The movie *Batman* made \$201 million in the United States when it came out in 1988.

Movies make comic book characters look real.

KEY NOTES

From Comics to Movies

How are comic books different from movies?

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Technology changes the arts *Level D*

New technologies, or new ways of doing things, have changed the world. Today, we can ride in planes instead of riding on horses. That's because of new technology. We can send mail through **computers** instead of through the post office. New technologies have changed art and music, too. Although artists still use paint and musicians still play pianos, new technologies allow artists and musicians to create their work in new ways. Perhaps the most exciting part of these new technologies is that they have **created** new ways to create art works. Just as people still send letters through the post office, people still use paint and pianos without speakers.

Today, however, artists can paint with beams of light. Musicians can write music with computers. Technology adds richness to the ways people can create and experience the arts.


Digital photography

At first, many people thought that photography was not really one of the arts. A photograph, after all, was nothing more than a picture of something that **existed** in life. Early in the 20th century, though, people began to think of photographs as art. They understood that photographers chose their subjects and arranged them just as painters did. Today, photography is an **accepted** art form.

Although photography was once a new technology, digital photography has become an even newer technology. Digital cameras store photos on **memory** chips, not on film. Photographers using this new technology do not need a darkroom. Instead, they load their images on a computer and print them on a printer.

Artists can easily change the colors, sizes, and shapes of their subjects on a computer screen. Digital photographers can also create photographs that look like paintings.

Art and Technology



Music and Computers

At first, people did not think computers should be used in music. Some people wondered if musicians were really composing music if they used a computer. If the sounds weren't coming from instruments, were they listening to real music?¹⁵

There are several ways musicians can use computers as they write and perform. **Composers** use an program a computer¹⁶ with sounds as **rhythms** and tell the computer how to arrange them. Composers can also tell a computer to add sounds that no instrument can make. The work can then be played either by instruments or on a machine called a **synthesizer** .¹⁷ A synthesizer has a keyboard and can make the sounds of other instruments.¹⁸

Musicians can also use a computer to write music. They play a song, and the computer records the sounds and turns them into written music that others can play.¹⁹

Fast Facts

- The music synthesizer was invented in 1935.
- The first synthesizer was the size of a room.
- Composers who once needed a large group of musicians to play their work now can hear it on a single computer.

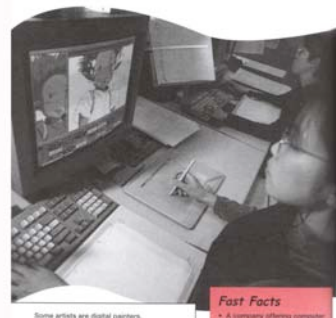
Synthesizers can sound like the piano and other instruments.

KEY NOTES

Music and Computers
How can musicians use computers?

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Art and Technology



Computer Art

Artists began using computers to create art in the early 1960s. As with music, some people did not think that art and computers should be used together. Computer artists, though, proved that computers could be used as an artist's tool.²⁰

Some **techniques** allow artists to create and change images on a computer screen. One technique, called digital painting, is like painting or drawing that is done on a computer screen, not on paper. Digital painters draw with a **stylus** , a special pen, on a tablet that is connected to the computer. The lines drawn by the stylus then appear on the computer screen. Using this technique, painters can work on one part of a painting and easily transfer their work to another part of the painting. Later, they can print their work and hang it on a wall.²¹

Fast Facts

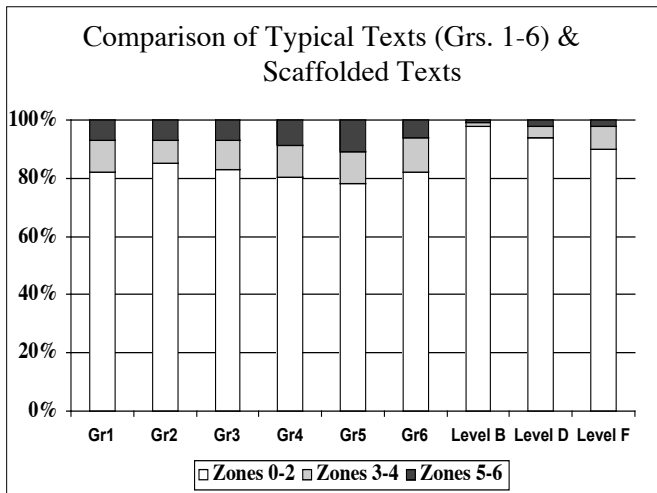
- A company offering computer art training costs online was sold for \$762 million.
- The first computer art competition was held in 1982.
- One piece of computer-generated artwork is a wall-sized head that answers questions people ask it.

Some artists are digital painters.

KEY NOTES

Computer Art
How can computers be used in art?

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4.2 Opportunities to develop vocabulary, comprehension, and knowledge

Vocabulary & Fluency

- Vocabulary knowledge was a significant and constant predictor of overall reading comprehension, regardless of grade level.
- While significant, fluency effects diminished from grades 4 through 8.

Yovanoff, Duesbery, Alonzo, & Tindal (2005)

Building Vocabulary

Computer Art

1. "Computer Art" is MAINLY about _____.

- how to put art on computers.
- how computers can design art.
- how artists use computers to create art.
- how many people buy and sell computer art.

2. In this reading, what does technique mean?

- creating digital paintings
- a way to use computers to paint
- using color in painting
- a way to do something

3. What is a stylus?

technology computer photography digital
musicians synthesizer technique stylus

1. Choose the word from the word box above that best matches each definition. Write the word on the line below.

- _____ a machine that can be used to store and use information
- _____ a special kind of pen
- _____ a way of doing things
- _____ science that is used to make tools that people can use
- _____ a way to create pictures
- _____ relating to information that can be stored in a computer
- _____ an electronic tool that can be used to make music and other sounds

2. Fill in the blanks in the sentences below. Choose the word from the word box that completes each sentence.

- To create art on that computer, use the _____ to draw on that connected tablet.
- Today, it _____ has replaced a pen and paper for many writers.
- Some artists use a painting _____ that involves different sizes of brushes.
- Both of those _____ play tubes.
- The _____ camera stores pictures as computer files.
- I can't tell if that music is a recording of live players or if it was done on a _____.
- The car was a huge breakthrough in transportation _____.
- Rena took up _____ so she would have a record of what her children looked like when they were young.

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Opportunities for Comprehension

Art and Technology

1. Use the idea web to help you remember what you read. In each box, write the main idea of that reading.

Technology Changes the Arts

Digital Photography

Art and Technology

Music and Computers

Computer Art

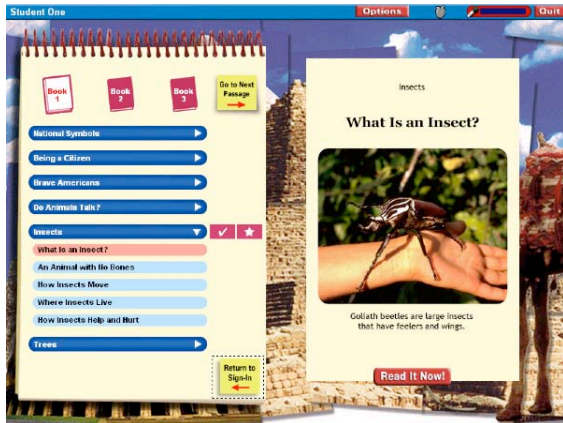
2. What did people first think about using technology in the arts?

3. How do artists use computers in music and painting today?

4. What are two ways the new technologies might change the art that artists make?

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4.3. Opportunities for extended practice with feedback and discretion



4.4. A critical mass of text



4. What are the features of an effective text-based intervention?

ANSWER:

- 4.1 Repetition of “high-leverage” vocabulary
- 4.2 Opportunities to develop vocabulary, comprehension, and knowledge
- 4.3 Opportunities to practice with feedback *and* discretion
- 4.4 A critical mass of text

5. What evidence is there that text-based fluency interventions make a difference?

Texts in studies reviewed by National Reading Panel (NICHD, 2000)

Texts with controlled vocabulary were used in 74% of the studies used in the meta-analysis. Of the four studies that used literature, only one reported a fluency outcome and, in that study, treatment and comparison groups did not differ significantly. That is: the effect size for fluency came from studies that used texts with controlled vocabulary.

(Hiebert & Fisher, *Elementary School Journal*, May 2005)

Study	Sample	Outcomes
Adams (2006)	29 grade 2 through 5 classrooms randomly assigned (560 students) to treatment or comparison	Technology version of text-based fluency program significantly > than district reading program on fluency
Hiebert (2005)	113 second graders in 3 schools (group assignment randomly by school)	Text-based fluency significantly > control on fluency; Basal fluency > (non-significant) control; Text-based fluency > basal fluency (non-significant)
Huxley (2006)	53 third-graders (half in treatment classrooms; half in comparison)	Text-based fluency significantly > district fluency in accuracy of text reading, rate of text reading, and knowledge
Vadasy & Sanders (in press-a)	162 struggling readers (Grades 2-3) randomly assigned to treatment or comparison	Text-based fluency program significantly > on word accuracy & fluency
Vadasy & Sanders (in press-b)	119 struggling readers (Grades 4-5) randomly assigned to treatment or comparison	Text-based fluency program significantly > on word and passage comprehension & vocabulary
Trainin, Wilson, Rankin-Erickson, Hayden (2007)	76 grade 2 through 5 classrooms randomly assigned (1,489 students) to treatment or comparison	Text-based fluency program (both print & technology versions) significantly > district fluency program on fluency and vocabulary

5. What evidence is there that text-based fluency interventions make a difference?

ANSWER: A substantial body of studies confirms that reading of texts with a high repetition of critical words supports fluency, vocabulary, comprehension, and knowledge acquisition.