Writing & Reading Connections

Steve Graham
Arizona State University
Steve.graham@asu.edu
Common Assumption

It is commonly assumed that reading and writing are related, but this relationship is not perfect.

For example, students who are good writers are almost always good readers, but –

Weaker writers are not always weaker readers.

Good readers are not always good writers.
Why Study Reading & Writing Connections

- Reading and Writing are connected, as they draw upon common knowledge and cognitive processes. Consequently, improving students’ writing skills should result in improved reading skills, and vice versa.
SHARED KNOWLEDGE THEORY

Reading and writing draw on the same pools of knowledge

1. **Content or domain** knowledge.
2. **Meta-knowledge** about written language, as readers and writers collectively draw upon what they know about the purposes and functions of written language and how writers and readers interact to help them interpret an author’s message and construct their own message for others to read.
3. **Pragmatic knowledge** of text attributes, including knowledge of the features of text, words, syntax, and usage, as writers and readers draw on these as they decode/encode words and comprehend/construct sentence or larger units of text.
4. **Procedural knowledge** which includes knowledge about how to access information purposefully, set goals, question, predict, summarize, visualize, and analyze.
Why Study Reading & Writing Connections

Reading and Writing are both communication activities, and writers should gain insight about reading by creating their own texts, leading to better comprehension of texts produced by others. Likewise, readers should gain insight about writing by reading what authors have written.
RHETORICAL Relations Theory

Engaging in reading or writing provides you with ideas and information about the other.

- The purposes of reading and writing are to communicate. This involves specific processes that can each inform the other. Reading-writing relations act as a kind of conversation, and the key variables include insights about and awareness of the conversational partners and their purposes.

- For example, readers may acquire important insights into writing, as they think about why an author used a particular word, phrase, sentence, or rhetorical device to deliver their intended meaning.
Why Study Reading & Writing Connections

Reading and Writing are both functional activities that can be combined to accomplish specific goals, such as learning new ideas presented in a text or reading to gather information for reading.
FUNCTIONAL THEORY

Reading and writing can be applied conjointly to meet literacy goals in a functional manner.

- Reading and writing are tools that can be used together much as a carpenter might use a spirit level and sabre saw alternately when building something.

- For example, students might generate questions about material read and answer them in writing to help them focus their attention on specific ideas in the text. Likewise, they might read to gather information to write about.
Activity

- Read the passage and complete the activity.

- Discussion Question:
  - What did you think of the passage?
  - Do you think the writing task added to your comprehension of the text? If so, in what ways?
1. Write a 2-4 sentence summary of the text.

2. Write and answer 3-4 questions about the text.

3. Take 3-4 lines of notes about the text.
A growing body of literature in education psychology advocates combining writing with reading as a profitable study technique. Beach and Bridwell (1984), Flower (1979), Kintsch and van Dijk (1978), Page (1974), and others argue that, when combined with reading, writing fosters the identification of significant information in a text and encourages reflection on that information as it is organized into a coherent written response. Wittrock (1983) asserts that writing generates relations among the parts of a text and between a text and its reader’s experience. Eanet and Manzo (1976) and Odell (1980) further claim that by varying the writing task in response to reading, a teacher can exercise control over the way students think about the content of a text (emphasis added).

If the demands of organizing language account in some measure for the positive effects of combined reading and writing activity, it would seem that the organizing demands associated with different writing tasks might contribute to these effects differentially. A demonstration of differential effects across variant writing tasks would lend support for methods intended to guide students through a lesson by having students respond to reading with different written responses. Currently, such methods are recommended without empirical justification. If writing tasks are going to be recommended rationally as instructional accompaniments to reading that provide a way of directing students’ thinking about subject matter, more needs to be known about how different
How did writing a summary foster comprehension?

How did writing and answering questions about text foster comprehension?

How did note taking foster comprehension?
Did We miss Anything?

- Writing fosters explicitness, as the writer must select which ideas in text are most important.

- Writing enhances understanding, as the writer must put ideas about text into their own words, making them think carefully about what the ideas mean.

- Writing is integrative, as it encourages the writer to organize ideas from text and about text into a coherent whole, establishing specific relationships between these ideas.
Return to Science -- Why Study Reading & Writing Connections

- If these theories are true –
  - We can leverage each of these skills to facilitate the success and the development of the other
  - Will this work with students who find literacy challenging?
  - Does this mean that we no longer need to dedicate specific time to the teaching of each of these skills?
DATA, DATA, DATA

- So, are the Shared Knowledge, Rhetorical Relation, and Functional Theories of Reading & Writing Relationships valid?

- Are integrated reading/writing programs effective?

- Does all of his work for those who have literacy challenges?
What Is Meta-analysis?

- Survey Research in which research reports, rather than people, are surveyed –
  - A coding form (survey protocol) is developed
  - A Sample or Population of research reports are gathered
  - Each report is interviewed by a coder who extracts important information about its characteristics and quantitative findings
  - The resulting data are then analyzed using special adaptations of conventional statistics to investigate and describe the pattern of findings
Meta-Analysis represents each studies findings in the form of effect sizes.

An effect size is a statistic that encodes the critical quantitative information from each relevant study finding. In essence, it standardizes the effects for each relevant study finding. The goal is to make the resulting numerical values interpretable across all the variables and measures involved. This allows us to compare outcomes from different studies and analyzes them statistically.
Shared Knowledge Theory – Writing to Reading

- Teaching Students the Writing Process, Text Structures for Writing, Paragraph or Sentence Construction Skills Improves Reading Comprehension (grades 1 -4)

- Average Weighted Effect Size = 0.22 Published Standardized Norm-Referenced Tests (Based on 12 Studies)

- Average Weighted Effect Size = 0.27 Researcher-Designed Tests (Based on 5 Studies)
Shared Knowledge Theory – Writing to Reading

- **Teaching Sentence Construction and Spelling Skills Improves Reading Fluency (grades 1-7)**
  
  *Average Weighted Effect Size = 0.66 Published Standardized Norm-Referenced and Researcher-Designed Tests Combined (Based on 5 Studies)*

- **Teaching Spelling Skills Improves Word Reading Skills (grades 1-5)**
  
  *Average Weighted Effect Size = 0.62 Published Standardized Norm-Referenced and Researcher-Designed Tests Combined (Based on 6 Studies)*
Shared Knowledge – Reading to Writing

Shared Knowledge? Teaching phonological awareness, phonics, comprehension, fluency, vocabulary

Average Weighted Effect Size = 0.57 Combined writing assessments (Based on 52 Studies)

- Writing quality = 0.63 (12 studies)
- Spelling = 0.56 (40 studies)
- Output = 0.37 (5 studies)
Shared Knowledge – Reading to Writing

Teaching phonological awareness = 0.69 (20 studies)

Phonics Instruction = 0.39 (14 studies)

Comprehension Instructions = 0.66 (12 studies)

Multi-Component = 0.47 (4 studies)
The average weighted effect size for lower achieving students was 0.39 (26 studies) for **Reading to Writing for Shared Knowledge**.

Not able to compute this for **Writing to Reading**, but the analyses did include a mix of students in the study. –
Rhetorical Relations Theory – Writing to Reading

- Increasing How Much Students Write Improves Students’ Reading Comprehension (grades 1 – 6)

  - Average Weighted Effect Size = 0.35 Published Standardized Norm-Referenced Tests (Based on 9 Studies)
Rhetorical Relations Theory – Reading to Writing

Average Weighted Effect Size = 0.33 Combined writing assessments (Based on 41 Studies)

Writing quality = 0.41 (29 studies)
Spelling = 0.34 (20 studies)
Rhetorical Relations – Reading to Writing

More Reading = 0.24 (12 studies)

Self-Teaching = 0.28 (15 studies)

Read & Analyze = 0.43 (5 studies)

Observe Readers = 0.62 (8 studies)
Important to Know

- The average weighted effect size for lower achieving students was 0.55 (27 studies) for Reading to Writing for Rhetorical Relations.

- I was not able to determine this for Writing to Reading.
Average Weighted Effect Size = 0.37 Published Standardized Norm-Referenced Tests (Based on 11 Studies)

Average Weighted Effect Size = 0.50 Researcher-Designed Tests (Based on 55 Studies)
Important to Know

- 94% of the studies yielded positive results
- The studies involved students in grades 2 to 12
- In 55% of the studies students wrote about Science and Social Studies text

- The average weighted effect size for lower achieving students was .64 (12 studies) for Writing to Reading for Functional Theory
Question Generation

- Content Area: Psychology
- Grade Level(s): 11-12
- ES = 0.51

- Students were given models of questions written by experts
- Students taught to identify main ideas to serve as core of the questions
- Students directed to form questions which asked for new instances of ideas or concepts
- When generating a new instance was inappropriate, questions could be about the text, but in a paraphrased format.
Note-taking: Concept Maps (Chang, Sung, & Chen, 2002)

- Content Area: Science
- Grade Level(s): 5
- ES = 0.52

- Scaffolded instruction:
  - Students were introduced to expert created models
  - Students filled in partially filled in expert models
  - Students were given word lists and concept links to help them create their own concept maps
  - Students independently created concept maps independently
Macrorules for Summarizing (Weisberg & Balajthy, 1990)

- Content Area: Social Studies
- Grade Level(s): 10-12
- ES = 0.44

1. Delete material that is unimportant
2. Delete material that it repetitive
3. Substitute a superordinate term for subordinate ones (i.e., collapse lists)
4. Select a topic sentence
5. If there is no topic sentence, invent one

*Students were taught to underline and cross out information using different colors. Summary writing was modeled and explained
Analysis or Interpretation Essays (Licata, 1993)

- Content Area: Science
- Grade Level(s): HS
- ES = 0.56 Analytic Essay
- ES = 0.33 Application Essay

- **Analytical Essay (Compare/contrast):** Students wrote about the similarities and differences between the pressure-volume and volume-temperature relations

- **Application Essay:** Students wrote about a concrete situation in which a balloon of gas is subjected to varying conditions
READING/WRITING INTEGRATED

- EFFECTS ON READING
  - ES = 0.39 (38 studies)

- EFFECTS ON WRITING
  - ES = 0.37 (37 studies)
Important to Know

- The average weighted effect size for lower achieving students was 0.35 (13 studies) for **Writing** for Writing/Reading Integrated

- The average weighted effect size for lower achieving students was 0.41 (15 studies) for **Reading** for Writing/Reading Integrated
So What?

READING & WRITING CONNECTIONS ARE REAL – AND SUPPORTED FROM MULTI-THEORETICAL PERSPECTIVES

READING CAN BE USED TO SUPPORT WRITING AND VICE VERSA

WE CAN PROFITABLY TAKE ADVANTAGE OF READING & WRITING CONNECTIONS TO SUPPORT STRUGGLING READERS AND WRITERS (Some Caveats)
So What?

Reading & Writing combined instruction produces modest, but significant effects. I would interpret this to mean that we want to leverage integration what we can, but we also need to dedicate time just to reading and just to writing learning.
Catalysts That Drive Writing/Reading Development
WHAT AM I GOING TO DO ABOUT THIS REPORT ON CATS? YOU'VE GOT TO HELP ME, HOBBS!

OK,... UM, FIRST LET'S MAKE A LIST OF WHAT WE KNOW.

YEAH! THAT'S A GOOD WAY TO START! GREAT!
NUMBER ONE: WHAT ARE BATS?

THEY'RE BUGS, AREN'T THEY? YEAH, PUT THAT DOWN.
#1 Bats = Bugs

ARE YOU SURE?

THEY FLY, RIGHT?
THEY'RE UGLY
AND HAIRY,
RIGHT? C'MON,
THIS IS TAKING
ALL DAY!
Catalysts That Drive Writing/Reading Development

Strategic Prowess
I think we've got enough information now, don't you?

All we have is one "fact" you made up.

That's plenty. By the time we add an introduction, a few illustrations, and a conclusion, it will look like a graduate thesis.

Besides, I've got a secret weapon that will guarantee me a good grade! No teacher can resist this!
A CLEAR PLASTIC BINDER! PRETTY PROFESSIONAL LOOKING, EH?

I DON'T WANT CO-AUTHOR CREDIT ON THIS, OK?
Catalysts That Drive Writing/Reading Development

Knowledge
Dear Pen Pal, How have you been?

Why do you have a Pen Pal?

To learn about other cultures... he tells me about himself, and I tell him about me...

Why would anyone want to hear about you?
Some days I feel like I'm writing uphill.
Catalysts That Drive Writing/Reading Development

» Motivation
Pavlov studied the salvation of dogs.
Catalysts That Drive Writing/Reading Development

Skills
Questions?