

INTEGRATING VISUOSPATIAL APPROACHES INTO RESEARCH READING AND WRITING

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Overview

Students and researchers draw on extensive sources from published literature, requiring skills to sort source materials, while reading deeply to extract content. The cognitive burden of the material volume, alongside lower comprehension and retention rates for digital reading, may cause anxiety for novice researchers who have trouble visualizing the final form of the manuscript and lack heuristics to organize and generate ideas. We present curriculum activities for reading and writing that engage visuospatial processes in the brain and enhance critical thinking. These activities help students break down tasks and use haptic and visual cues through drawing, handwriting, color and craft.

Reading and writing are visuospatial processes that build and use mental maps for recall and composition

Objectives

- Teach skills to create mental maps to navigate and organize the overall form of the written work
- Reduce reliance on digital reading and composition while still using digital tools
- Give a tactile feel to remember text, understand argument, and connect related information
- Teach skills to analyze source materials and organize evidence through outlining
- Reduce cognitive burden, anxiety and writers blocks for novice researchers and writers

UNDERSTANDING
SOURCE MATERIAL

Problems

- Source materials are long, dense and have unfamiliar terminology
- Students often have difficulty assigning credibility to statements
- Not all source materials are relevant to the writing

Solutions

- *Analyzing Arguments* introduces vocabulary of the elements of an argument
- *Questions to Ask of a Text* steps students through categories of inquiry
- *Passage Analysis* is a tactile and spatial activity that isolates textual evidence from the parent document, allowing students to mark up, code, and connect content with other source materials

Analyzing Arguments

Guide for Analyzing Arguments

Key Terms (can be applied to constructing your own argument or analyzing those of others):

Claim: “What do you think?”
Reasons: “Why do you think that?” (your **rationale**)
Evidence: “How do you know that the claim is true?”
Warrants: “Why do the reasons/evidence support the claim?”
Concession: “What are alternative views or contrary evidence?”
Qualification: Should the claim be limited?
Assumptions: What beliefs underlie the argument?
Status quo: “The existing state or condition” (*American Heritage Dictionary*)

About Warrants: In argument, a warrant can be thought of as an inference, or logical conclusion, that connects the data to the claim **implicitly**. Warrants are usually a definition, principle, or rule (defined by Stephen Toulmin in *The Uses of Arguments*). In common usage, a warrant is “something that assures, attests to, or guarantees; proof” (*American Heritage Dictionary*).

Five Types of Claim:

Definition – “How should something be defined or categorized?”
Fact – What is considered true? (in the past or present)
Value – What is the value or worth of something? (evaluation, judgment)
Cause & Effect – Did a cause lead to an effect? Was an effect due to a cause?
Policy – “Should something be done” or not done?

Four Principles of “Quality Evidence”

- 1) “Is it accurate?”
- 2) “Is it representative?” (“a typical example or specimen of a group, quality, or kind” *American Heritage*)
- 3) Is it sufficient? In cause and effect arguments, you can ask if a factor is *necessary* to produce a certain outcome (the outcome won’t happen without it). You can also ask if the factor is *sufficient* to produce that outcome. If there need to be other factors, too, it is *not sufficient* to explain the outcome.

Apart from dictionary definitions, the quotations above come from “Argument Review in Context,” an online guide from the University of Virginia: <http://faculty.virginia.edu/schoolhouse/VP/Phandouts/ArgumentReview.doc>

Questions to Ask of a Text

Questions to Ask a Text

Purpose & Structure

- What do you know about the writer—profession, “place in society,” etc.?
- Why is he or she writing this document? Is there a larger debate implied?
- Written arguments are like pieces of music—with words (notes), sentences (phrasing), paragraphs (melodies), sections (movements), and conclusion (finale). . . all constituting the *composition*.
- What is the structure of the **document** (outline the sections)? What does each section DO?

Argument (reasons/evidence + claim = argument)

- What particular issue does the **entire document** address? (question or controversy?)
- What is the main point or claim of the document? If analyzing a section, what is the claim there? You can paraphrase it in a phrase.
- Is the main point or claim *descriptive*, describing how something “is, was, or is going to be”? Is it *prescriptive* (describing how something should be)? (Brown & Keeley)
- How does the main point of a section relate to the larger argument in the document?
- What are the reasons given for the major claim in the document?
- What reasons are given for minor claims in sections of the document (reasons being explanation or rationale)?
- Are there *ambiguous* terms (words or phrases) in the claim or reasons that need better definition?

Evidence

- What kind of *evidence* is used in the passage? (anecdote, testimony & research, case examples, personal experience, analogy, statistics, visuals, physical evidence)
- What is the likely source of evidence? (text, interview, survey, experiment, etc.)
- Does the writer interpret the evidence, showing how it supports the claim?
- Could any of the evidence be misinterpreted by readers?

Assumptions (beliefs influencing the text)

- What are *descriptive* assumptions in the passage—ideas that may be implied about the way the world is?
- What are value assumptions about the way the world *should* be? (Consider the writer’s background; mainstream values within the society; countercultural values.)

Passage Analysis

Louis Waldman
“Civil Rights—Yes: Civil Disobedience—No (A Reply to Dr. Martin Luther King)”
Reprinted from the *New York State Bar Journal*, XXXVII (August 1965) pp. 333-37 in
Civil Disobedience: Theory and Practice, edited by Hugh Adam Bedau. New York: Pergamon, 1969.

Handwritten notes:
ideal v. real
power v. logic
does King believe that the package of civil liberties is realistic?
Nations' rights vs. civil rights
laws not providing AAs
assumption: segregation is not realistic
assumption: segregation is not realistic
cites B v. S as progress
not achieved via illegal means
all rights thru Constitution
must abide by all laws in spirit all rights
ignoring barriers on the ground
targeting King's ideology

ORGANIZATION &
COMPOSITION

Problems

- Evidence often becomes trapped in digital source materials and students don’t engage detailed information
- Students have difficulty organizing argument or narrative and have anxiety with outlining
- Students can’t visualize the form of the manuscript
- Composition in a word processor limits free organization

Solutions

- *Cards* allows students to clip quotes and detailed evidence from manuscripts into PPT slides
 - Categorization through titles
 - Retains connection with citation
 - Reduces burden of non-relevant sources
- *Blocks* allows students to create arrangements to build outlines using printed and cut out slides
 - Tactile activity that is not constrained by the document format of digital composition
 - Activity engages working spatial memory

Cards & Blocks

Examples of PowerPoint “cards” with quotes extracted from the source material. Cards can be arranged into “blocks” to compose the manuscript.

Writing as a visual activity

- “Writing is a visual activity guided by the writer’s eyes; it is also a spatial activity in that it involves organizing the text by leaving a **graphic trace** on the page. Additionally writing often consists in translating visual and spatial mental representations into text, and the written text may also be represented in a visuospatial format.”

Olive & Passerault 2012

Broader Impacts

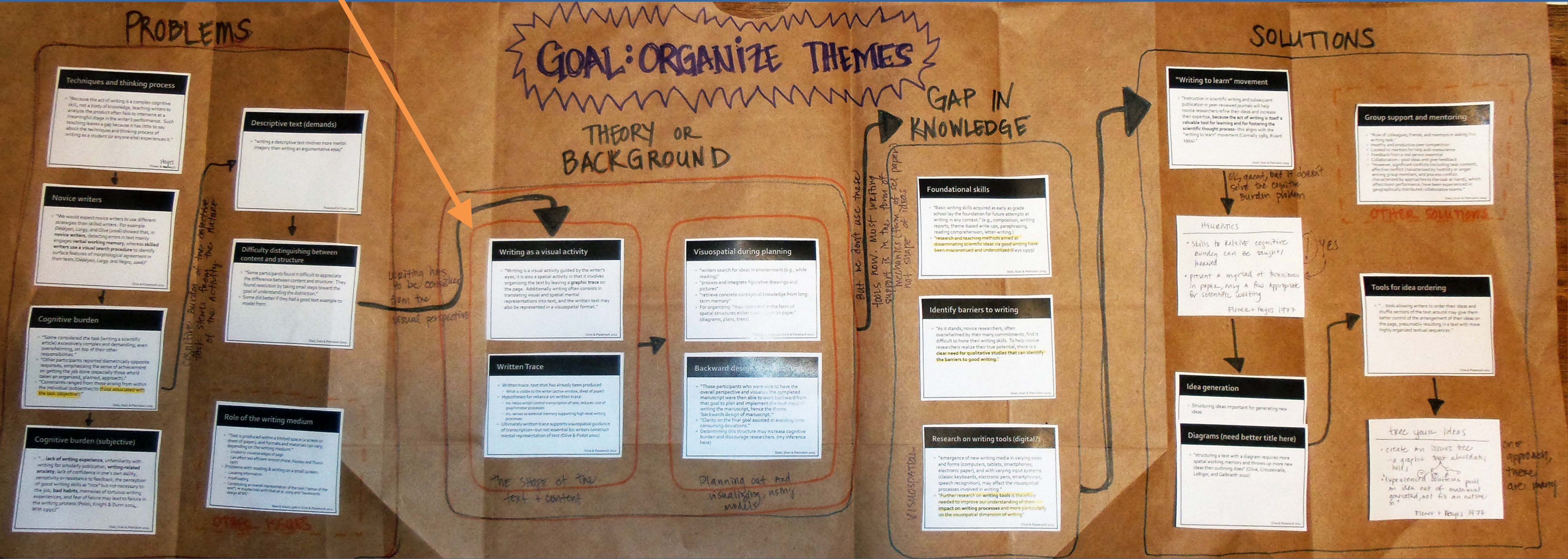
*“The temperature of the north-facing wall, which received only diffuse solar radiation, varied little over the course of the day and was similar to air temperature”

Bonan 2000

Varying Impacts

- “Impacts of livestock management on savanna rangelands vary depending on stocking rate and its interactions with rainfall regime, soil properties, topography, and the occurrence of stochastic and extreme events such as drought (Walker 1993).

Du Toit, J.T., and D. H. M. Cumming. 1999. Functional significance of ungulate diversity in African savannas and the ecological implications of the spread of pastoralism. *Biodiversity and Conservation* 8:1643-1661.



More Information

This curriculum will be available on the University of California, Berkeley Center for Teaching and Learning Website in the Fall of 2015 (<https://teaching.berkeley.edu/>). If you’d like to work with the unpublished materials, please email Patina Mendez (patina.mendez@berkeley.edu) or Teri Crisp (tcrisp@Berkley.edu).

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