Search and Compose: Exploring Parallels in the Research and Writing Processes

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Introduction

Context

We know that research goes on throughout the writing process. Could it be that the writing process extends back to the beginning of research, into the information search process itself? We seek to explore these relationships by examining undergraduate search behaviors through the lens of two seminal works in Writing and Composition Studies:

- **Linda Flower and John Hayes' article "A Cognitive Process Theory of Writing" (1981)**

  Composing behavior is a fluid series of Planning, Translating and Reviewing activities that are continuously applied as writers develop and refine their Goals.

  "In the act of writing, people regenerate or recreate their own goals in light of what they learn." (p.381)

- **Diana Hacker's *The Bedford Handbook* (1998)**

  Standard organizational principles for writing include Examples and Illustrations, Comparison and Contrast, Cause and Effect, and Classification and Division.

  "There is nothing particularly magical about these patterns (sometimes called methods of development). They simply reflect some of the ways in which we think." (p.84)

Purpose

Parallels found in the search process and the writing process have the potential to enhance instruction by enabling librarians to intervene more effectively in the writing process, and grow collaborative relationships between librarians and writing instructors to improve student learning.

Working Hypothesis

Successful undergraduate searchers generate more dynamic, short-term goals during the course of their search, i.e. they revise their goals based on what they learn, than less successful searchers. They also spend more effort planning and reviewing than less successful searchers.

References

Conner, M., & Browne, M. (2013). Navigating the information-scape: Information visualization and student search behavior. *Reference Services Review 41*(1), 91-112.

Flower, L., & Hayes, J.R. (1981). A cognitive process theory of writing. *Composition and Communication 32*(4), 365-387.

Hacker, D. (1998). *The Bedford handbook*. (5th ed.). Boston: Bedford Books.

Methods

Data Collection
We recorded and transcribed 19 search sessions from 10 undergraduate students using *Academic Search Complete* to locate relevant article citations on unfamiliar topics.

Data Analysis
We formulated two sets of codes, one for the writing process (derived from *The Bedford Handbook*) and one for the search process, and applied them to the search transcripts, to see whether they appeared and if there were patterns that were consistent with Flower and Hayes' theory of composing.

Writing Process

- **Examples/Illustrations:** instances/cases that make a point
  "I'll have to write something about I did a fundraiser for it by selling pictures, and that would get my audience's attention."
- **Comparison/Contrast:** similarities/differences of concept
  "Maybe some kind of comparison between the cultures and homeschooling would work."
- **Classification/Division:** organization into categories
  "Okay, so I have one on the behavior and effects on the marine environment, one on what can be gained from drilling or for getting oil and the potential risk, and I could use this …"
- **Cause/Effect** : causal relationship, generally mechanistic
  "I'll probably focus on the dangers and, um, results of oil spills to the environment."

Search Process

- **Broadening/Narrowing** : moving between general and specific
  "…maybe I should narrow down my topic more so maybe combine insomnia and treatment."
- **Synonyms** : finding alternate terms for a subject
  "Maybe another word for privacy. Regulation of information."
- **Recursion** : going back to results (instead of initiating a new search)
  "I'm finding some good stuff, I'll keep going instead of starting a new search."
- **Format:** characterizing a result, e.g. chart, case study, primary source
  "So, this was a survey done for watching reality TV."

Preliminary Results

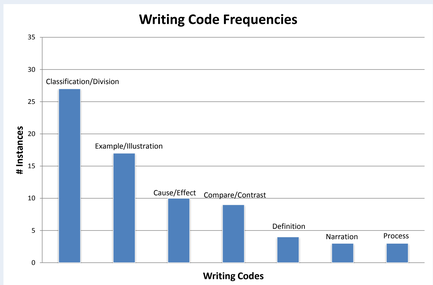

Figure 1: *The Bedford Handbook* identifies 9 organizational principles. We noted the presence of 7 of them in our undergraduate search transcripts. *Classification/Division* and *Examples/Illustrations* were most frequently used.

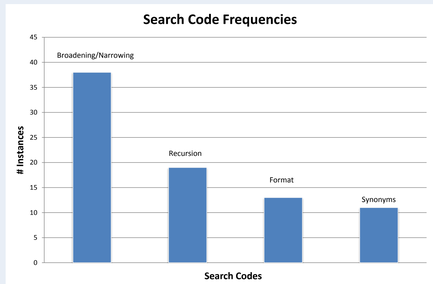

Figure 2: We utilized 4 codes to note basic , recognized search behaviors. Students relied most heavily on *Broadening/Narrowing and Recursive* search strategies.

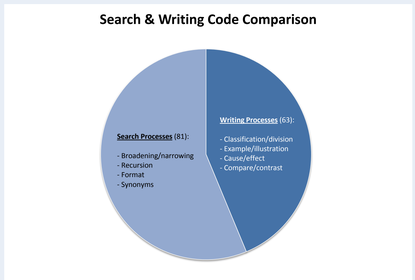

Figure 3: We analyzed 19 search transcripts from 10 undergraduate students. There were comparable numbers of the most commonly used Search and Writing strategies.

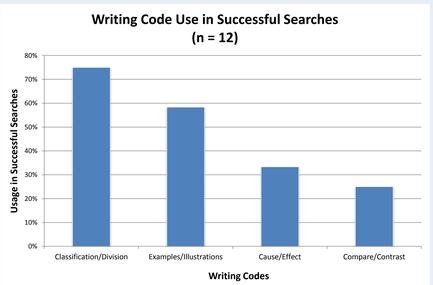

Figure 4: In the searches the researchers tagged as successful, 75% included *Classification/Division* as an organizational strategy, and 58% utilized *Examples/Illustrations*.

Discussion & Next Steps

Our data is exploratory and does not lend itself to definitive conclusions. However, we do offer several observations. Most Writing Process Codes were represented in the transcripts, with a subset (examples/illustrations, comparison/contrast, cause/effect and classification/division) showing frequent use. Their presence in the transcripts suggests that in spite of new composition theories, students continue to make use of traditional writing paradigms.

Our preliminary analysis of the Search Process Codes is not surprising and confirms the importance of recognized search strategies, including broadening/narrowing, the use of synonyms and recursion. The fact that the highest frequencies for Writing Process Codes and Search Process Codes are comparable may indicate that both processes are in fact intertwined and occurring simultaneously.

We plan to examine additional transcripts to determine if the trends we have noted thus far are consistent. If so, our next step will be to begin looking for connections and patterns in how searchers move from one sub-goal (code) to another through the iterative processes of planning, translating, and reviewing, with the hope of developing an integrated model of the cognitive processes involved in searching and composing.