

## Using a Wiki to Teach College Level Academic Writing

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Course Name

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Date

Present and emerging technology is redistributing the foundational tenets of composition-rhetoric theory and pedagogy onto the shifting sands of the Web 2.0 platform. As Lanham reminds us in *The Electronic Word*, the genre of writing has always been in flux.<sup>1</sup> And the Web 2.0 platform testifies to the changed environment in which the written word is now also read. Interactive media has turned readers into viewers and writers into multimodal composers to such a degree that technology and text have developed a symbiotic relationship.<sup>2</sup> Because students are accustomed to navigating web pages and crawling social networking sites, writing teachers will be working in this emerging genre with and as interactive rhetoricians. Traditional goals for teaching writing must adapt to a multitude of twenty-first century literacies—and to the technologically competent students who inhabit these classrooms.

Teaching writing by employing the tools made available by Web 2.0 technology—including hypertext documents—would allow students to meet the changing educational requirements for writing with technology. According to The International Society for Technology in Education (ISTE), “technology-literate students should be able to “create media-rich presentations for other students on the appropriate and ethical use of digital tools and resources”<sup>3</sup> by the time they graduate from high school. They also recommend that children aged four through eight, in prekindergarten to second grade, should be able to “in a collaborative work group, use a variety of technologies to produce a digital presentation or product in a curriculum area.”<sup>4</sup> According to ISTE, students should be able to use technology to collaborate before they can even compose academic texts.

Consequently, computers and other microchip-based technology have had a huge impact on academia, and subsequently, on writing. Students who participate in social networking sites like Facebook, MySpace, nings, and blogs are accustomed to writing in the World Wide Web environment where computers translate hypertext markup language (HTML) to display text on a viewer's screen. Yet, most people never need to learn HTML code because the social networking sites employ a graphic user interface (GUI) that simulates a word processing program such as Microsoft Word for example. This simple to use GUI is referred to as a WYSISYG (pronounced whiz-zee-whig), an acronym for What You See Is What You Get, because people can write on web pages without HTML code. A wiki is an example of an editable web page which uses a WYSISYG GUI.

In "Interface as Exordium: The Rhetoric of Interactivity," Teena A. M. Carnegie describes a wiki basically as "a collaborative web site that allows users to add pages and produce and edit content."<sup>5</sup> As a multimodal document, a defining feature of a wiki is, therefore, its ability to present information in a variety of ways. Writing nodes, establishing links with semantically significant connections (e.g., hypertext), and determining structure are three key components of writing on a wiki.<sup>6</sup>

In colleges and universities, writing has generally functioned in three predominant ways. First, learning to write has consisted of mastering the basic of written language instruction. Second, writing to demonstrate learning has functioned as an assessment tool within the teach/learn paradigm. And third, writing to learn continues to serve as a heuristic. Consequently, process-to-product writing breaks down the larger writing

process into subordinate sub-processes. These subprocesses are contingent upon a metacognitive approach to writing which has been informed by the hierarchical cognitive process model of Flower and Hayes,<sup>7</sup> as well as the recursive writing process models theorized by Emig<sup>8</sup> and Perl,<sup>9</sup> and more recently the cognitive flexibility theory (CFT) proposed by Rouet, Levonen, Dillon, and Spiro.<sup>10</sup> Teaching process-to-product writing involves teaching specificity of detail, narrative structure, organizational patterns, abstraction to higher-order thinking patterns (e.g., questions of significance), and analogical thinking (e.g., comparison to other situations). Writing hypertext helps students devise these rhetorical strategies on a three-dimensional platform.

Hypertext processing and hypertext production involves the application of written language skills as well as the development of metacognitive ability. The long-held belief that writing is a recursive process has been substantiated by Rouet and Levonen<sup>11</sup> Based on “their observations of students’ failure to acquire advanced knowledge, Spiro et al. claimed that ‘revisiting the same material, at different times, in re-arranged contexts, for different purposes, and from different conceptual perspectives is essential for attaining the goals of advanced knowledge acquisition.’”<sup>12</sup> In other words, the authors believe that learning occurred in a recursive manner. Additionally, they claim that because hypertext promotes the multiple structuring of contents, it is a suitable medium to enhance the transfer of learning across situations.

As stated earlier, hypertext adheres to many of the same sub-processes of the writing process (e.g., Emig,<sup>13</sup> Flower & Hayes,<sup>14</sup> Perl<sup>15</sup>). Subsequently, a recursive approach to processing and producing hypertext has demonstrated

positive effects on transformational learning. This is evidenced in Jacobson and Spiro study, in which their experimental group read a hypertext multiple times, but, each time followed a different path through the document such that the order of nodes presented the information from different perspectives. In the study, the experimental group and the two control groups (who read the content in only one thematic order) worked with a computer-based drill-and-practice program to foster a deeper processing of the content. When tested on their knowledge about individual facts, the participants in the control groups scored significantly higher than those in the experimental group. However, the experimental group achieved significantly better results in a transfer test, in which participants had to write essays on given problems. The results of the experiment indicated that processing the same material from different perspectives may increase the acquisition of flexibly applicable knowledge. However, it examined the receptive handling of given hypertext structures. Asking the learner to *actively construct* a hypertext from different thematic perspectives would correspond to the core assumption of CFT. Because of the learner's more active role, which is in the spirit of the theory, one could even say that such a learning scenario fits CFT assumptions even better than the experimental design used by Jacobson and Spiro<sup>16</sup> themselves.<sup>17</sup>

These research conclusions suggest that incorporating hypertext writing using a wiki in college writing courses which subscribe to the long-held beliefs of recursive process writing theory, as well as, cognition theory could facilitate transformational learning while students are engaged in process-to-product writing. Furthermore, in addition to facilitating transformational learning, actively

constructing hypertext can foster critical thinking through argument, textual analysis, language awareness, rhetorical strategy development, and process-to-product writing.

Writing with links gives students a deeper and more complex understanding of the course content. When students segment, combine, cluster, link, and search for global relations between ideas, they will deepen their understanding of material—in any subject.<sup>18</sup> Students develop a web of understanding that is not linear. Additionally, the writer develops a more sophisticated awareness of audience and links.<sup>19</sup> Writing with hypertext deliberately shifts control from the writer to the reader because the writer is giving the reader control as to how to read the writing. This fosters close reading, substantive writing, and critical thinking. Current research addresses the socially constructed nature of both hypertext and process writing (Bruffee,<sup>20</sup> Faigley,<sup>21</sup> Lunsford,<sup>22</sup> Talamo & Fasulo<sup>23</sup>). A wiki, as an authoring tool and “datagogy”<sup>24</sup> encourages the social construction of knowledge through collaboration within a “community of learning”. Therefore, the wiki seems to be a facile tool for teaching a metacognitive approach to process-to-product writing, transformational learning, and collaboration.

Previous Investigations

### **Transformational Learning**

Text processing, within a cognitive science context, seeks to research “how understanding is achieved through mental processes that act on text structures and reader knowledge.”<sup>25</sup> With regard to text production, research by

Braaksma et al., conclude that experience “with hypertext writing may help students to achieve better writing plans for both linear and hypertext.”<sup>26</sup>

### **Metacognition**

Hypertext facilitates a metacognitive approach to process-to-product writing in which text processing and production facilitates transformational learning. A study by Jacobson and Spiro (1995) entitled “Hypertext Learning Environments, Cognitive Flexibility, and the Transfer of Complex Knowledge: An Empirical Investigation” showed that the “task of constructing the hypertext from two different reader perspectives therefore involved a more intense dealing with the hypertext structure. Furthermore, and in line with the knowledge-transforming model, the participants reflected more strongly on the semantic structures of the subject area they were dealing with.”<sup>27</sup> This focus on semantic structures yields promising implications for teaching process-to-product writing; and, their conclusion that writing hypertext can promote learning makes teaching writing with hypertext an arguable benefit. The research by Braaksma et al., showed that “analysis and ordering ideas is important in linear writing, but it appears to be more often elicited in hypertext writing.”<sup>28</sup> This research supports learning outcome goals requiring the writing of essays marked by intellectual engagement and critical reflection.

Because hypertext documents, such as wikis, can be read in multiple ways, it is not a sequential text.<sup>29</sup> Instead, links connect individual pages through a number of logical associations or complex relations. Therefore, the writer must ensure that each route provides the reader with clear and cohesive information.

Hence, writing with hypertext requires an invention strategy which accounts for various linking options yet still produces a cogent document. Consequently, wikis can be used to teach, clarify, reinforce, and deepen many fundamental writing skills.

## Notes

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2. Anthony Ellerston, "New Media Rhetorics in the Attention Economy," *Computers and Composition Online* (Fall 2009), accessed January 11, 2009, <http://bgsu.edu/cconline/ccarticle/home.html>.
3. Lori Higgins, "Technology Clicks With Kids: Computers Transform Classrooms." *Detroit Free Press*, November 26, 2007, quoted in Gerben, "Putting 2.0 and Two Together: What Web 2.0 Can Teach Composition about Collaborative Learning," *Computers and Composition Online* (Fall 2009): 5, accessed January 17, 2011, <http://candcblog.org/gerben>.
4. Ibid.
5. Teena A. M. Carnegie, "Interface as Exordium: The Rhetoric of Interactivity," *Computers and Composition* 26, no. 3 (Fall 2009): 169, accessed January 11, 2011, doi:10.1016/j.compcom.2009.05.005.
6. Rainer Bromme and Elmar Stahl, "Writing and Learning: Hypertext as a Renewal of an Old and Close Relationship," in *Writing Hypertext and Learning: Conceptual and Empirical Approaches*, eds. Rainer Bromme and Elmar Stahl (Oxford, England: Elsevier Science, 2002), 7.
7. Linda Flower and John R. Hayes, "A Cognitive Theory of Writing," *College Composition and Communication* 32, no. 4 (1981): 356-542, accessed January 11, 2011, <http://www.jstor.org/stable/356600>.
8. Janet Emig, *The Composing Process of Twelfth Graders*, (Urbana, IL: National Council of Teachers of English, 1971).
9. Sondra Perl, "Understanding Composing," *College Composition and Communication* 31, no. 4 (1980): 363-369, accessed January 10, 2011, <http://www.jstor.org/stable/356386>.
10. Jean-Francois Rouet, Jarmo J. Levonen, Andrew Dillon, and R. J. Spiro, "An Introduction to Hypertext and Cognition," in *Hypertext and Cognition*, eds. Jean-Francois Rouet, Jarmo J. Levonen, Andrew Dillon, and R. J. Spiro (Mahwah, NJ: Lawrence Erlbaum, 1996), 3-8.
11. Jean-Francois Rouet, and Jarmo J. Levonen, "Studying and Learning with Hypertext: Empirical Studies and Their Implications," in *Hypertext and Cognition*, eds. Jean-Francois Rouet, Jarmo J. Levonen, Andrew Dillon, and R. J. Spiro (Mahwah, NJ: Lawrence Erlbaum, 1996), 9-23.
12. Ibid, 13.

13. Emig, *The Composing Process*.
14. Flower and Hayes, "A Cognitive Theory of Writing," 365-387.
15. Perl, "Understanding Composition," 363-369.
16. Michael J. Jacobson and Rand J. Spiro, "Hypertext Learning Environments, Cognitive Flexibility and the Transfer of Complex Knowledge: An Empirical Investigation," *Journal of Educational Computing Research* 12, no. 4 (1995): 325, quoted in Rainer Bromme and Elmar Stahl, "Learning by Producing Hypertext from Reader Perspectives: Cognitive Flexibility Theory Reconsidered," in *Writing Hypertext and Learning: Conceptual and Empirical Approaches*, eds. Rainer Bromme and Elmar Stahl (Oxford, England: Elsevier Science, 2002), 39-62.
17. Rainer Bromme and Elmar Stahl, "Learning by Producing Hypertext from Reader Perspectives: Cognitive Flexibility Theory Reconsidered," in *Writing Hypertext and Learning: Conceptual and Empirical Approaches*, eds. Rainer Bromme and Elmar Stahl (Oxford, England: Elsevier Science, 2002), 42.
18. Ibid, 40.
19. Andrew Dillon, "Writing as Design," in *Writing Hypertext and Learning: Conceptual and Empirical Approaches*, eds. Rainer Bromme and Elmar Stahl (Oxford, England: Elsevier Science, 2002), 68.
20. Kenneth Bruffee, "Collaborative Learning and the 'Conversation of Mankind'", *College English* 46, no. 7 (November 1984): 635-652, accessed January 10, 2011, <http://www.jstor.org/stable/376924>.
21. Lester Faigley, "Competing Theories of Process: A Critique and a Proposal," *College English* 48, no. 6 (1986): 527-542, accessed January 17, 2011, <http://www.jstor.org/stable/376707>.
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24. Joe Moxley, "Datagogies, Writing Spaces, and the Age of Peer Production," *Computers and Composition* 25, no. 2 (Spring 2008): 182-202, accessed January 17, 2011, doi:10.1010/j.compcom.2007.12.003.
25. Charles A. Perfetti, "Text and Hypertext," in *Hypertext and Cognition*, eds. Jean-Francois Rouet, Jarmo Levonen, Andrew Dillon, and R. J. Spiro (Mahwah, NJ: Lawrence Erlbaum, 1996), 158.

26. Martine A. H. Braaksma, Gert Rijlaarsdam, Michel Couzijn, and Huub van den Bergh, "Learning to Compose Hypertext and Linear Text: Transfer or Interference," in *Writing Hypertext and Learning: Conceptual and Empirical Approaches*, eds., Rainer Bromme and Elmar Stahl (Oxford, England: Elsevier Science, 2002), 35.

27. Jacobson and Spiro, "Hypertext Learning Environments, Cognitive Flexibility and the Transfer of Complex Knowledge: An Empirical Investigation," *Journal of Educational Computing Research* 12, no. 4 (1995): 301-333, accessed January 24, 2011, <http://baywood.metapress.com/link.asp?id=4t1bhbp03f7ej4pn>.

28. Braaksma et al., "Learning to Compose Hypertext," 35.

29. Peter W. Foltz, "Comprehension, Coherence, and Strategies in Hypertext and Linear Text," in *Hypertext and Cognition*, eds. Jean-Francois Rouet, Jarmo J. Levonen, Andrew Dillon, and R. J. Spiro (Mahwah, NJ: Lawrence Erlbaum, 1996), 109-136.

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