"IT TAKES A WHOLE CAMPUS": INFORMATION LITERACY IN COMPOSITION AND ACROSS THE CURRICULUM

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I don't know why I can never bring myself to write research papers until the last minute. It's not a difficult thing to do; in fact, it's rather easy. Maybe it's because it's boring. . . . I can never keep a good train of thought because it's not coming from me or my thoughts; it's coming from some book and all I'm doing is regurgitating information that the teacher already knows. So why bother? (Nelson and Hayes 10)

The old axiom "knowledge is power" could easily be a motto of information literacy-based learning. An information literate student has the power to ask the right questions, find appropriate information, perform focused analysis, and derive reasonable answers both at the university level and in the wider world. (Williams, Goodson, and Howard 518)

Information literacy has been labeled a "new liberal art." Why has information literacy become such an important part of undergraduate education? Researchers argue that "as we witness not only the saturation of our daily lives with information organized and transmitted via information technology, but also the way in which public issues and social life increasingly are affected by information technology . . . what it means to be information

literate becomes more acute for our whole society" (Shapiro and Hughes). Information literacy maintains a prominent place in discussions of the goals of higher education primarily because of its focus on creating lifelong learners. However, as the two quotations above reveal, educators must promote information literacy, while at the same time challenging students' misperceptions about the values of conducting research. Achieving these two goals is essential.

The American Library Association offers the following detailed description of the competencies required to be considered information literate: 1) Determine the extent of information needed; 2) Access the needed information effectively and efficiently; 3) Evaluate information and its sources critically; 4) Incorporate selected information into one's knowledge base; 5) Use information effectively to accomplish a specific purpose; 6) Understand the economic, legal, and social issues surrounding the use of information, and access and use information ethically and legally.

According to Ilene F. Rockman (coordinator of the Information Competence Initiative for the California State University, the largest system of higher education in the country), "Information literacy is no longer just a library issue. It is the critical campus-wide issue for the twenty-first century, of keen importance to all educational stakeholders . . ." (1). She contends:

> Individuals who are knowledgeable about finding, evaluating, analyzing, integrating, managing, and conveying information to others effectively are held in high esteem. These are the students, workers, and citizens who are most successful at solving problems, providing solutions, and producing new ideas and directions for the future. *They are lifelong learners*. (Rockman 2) [italics added]

As this quotation reveals, information literacy is not just an academic issue; Rockman argues that workers and citizens who are information literate will be effective problem solvers and will

have the knowledge needed to provide solutions to future problems. President Obama demonstrated his support of information literacy when, in 2009, he declared October to be National Information Literacy Month (Weiner 356). Focusing on creating information literate students and citizens is more critical than ever; according to Alison J. Head and Michael B. Eisenberg, researchers for the respected Project Information Literacy program, "students are entering the world of higher education at a time when the entire digital information universe is expanding at an unprecedented rate—six-fold each year" ("How College Students Seek Information" 1). More and more colleges have embraced the goal of graduating information literate students and have recognized that accomplishing this goal requires collaboration among faculty, librarians, administrators, and students.

Information Literacy and the Role of the Research Paper

Not surprisingly, the research paper remains a staple of undergraduate education; the research paper is the vehicle for helping students to develop the skills, knowledge, and habits of mind necessary to become information literate graduates. A study of over 500 undergraduates at a medium-sized public university found that 95 percent had been assigned papers that required them to use research sources (Burton and Chadwick 316). The authors of this study argue that teachers who assign research papers share a "central assumption of academic writing: that a writer will support claims with appropriate, valid, and authoritative evidence" (310). This central assumption is shared by educational stakeholders across the curriculum.

What, in particular, do educators value about the research paper assignment and, in turn, information literacy? Sandra Stotsky, a Research Associate at the Harvard Graduate School of Education, argues that "[T]he research assignment [is] probably the most important vehicle teachers at all educational levels have for

fostering independent thinking and responsible writing" (99). Toby Fulwiler, a composition scholar, agrees that the research paper allows students to become better thinkers and writers. He claims that "when teachers and curricula work as they are supposed to [in higher education], students learn higher-order thinking skills that will color the way they receive, process, formulate, and communicate ideas for the rest of their lives. *And at the heart of this process rests the research assignment*" (87, italics added). As educators, we may share these valuable goals for the research paper, but many teachers present a more sobering view of how students actually approach research assignments. For example, two researchers complain that "the assigned research report is more like a one-night stand" than an act of genuine inquiry (Burton and Chadwick 325). Another educator contends that students approach the research paper in this way because of how it has "always been presented to them, from high school on up into even freshman composition"; based on these early experiences, students seem to believe that all they need to do is "churn out a standard, stagnant form" (Kynard 128). Finally, Robert Davis and Mark Shadle speak for many of us when they say, "we would like to believe that research writing teaches valuable skills and encourages students to commit to the academic ideals of inquiry and evidentiary reasoning," but we are all too often disappointed when students view the research paper as an exercise in collecting and presenting information for the teacher-as-examiner (419).

My own research supports this picture of students who rely on ineffective and truncated views of the research process. In a study conducted at a large urban university, I surveyed 235 randomly selected, first-year students and asked them to describe their process for writing a research paper by recording and explaining the sequence of steps they follow in completing a research paper assignment from the beginning to the end. Nearly 75% of the students described a process that I labeled the "Compile Information Approach"; this low-cost process entailed getting or finding a topic, doing "one-shot" research, and writing the paper

(Nelson "The Research Paper, 67). These students saw their main task as compiling and presenting information "to the customer neatly wrapped in footnotes and a bibliography" (Larson 816). In addition, the "customer" who receives students' research products, in most cases, has no genuine interest in or need for the information students have collected. In "Information Literacy: A Call to Action," Sharon Weiner, a professor of information literacy, argues that stakeholders "can no longer ignore the growing evidence that there are deficits in college students' information-seeking behaviors" (356). How can we, as educational stakeholders, address these deficits and ensure that our students become information literate during their college careers?

I believe that many students' research practices have changed very little in spite of the advances in research technology and the growing emphasis on teaching information literacy. For the most part, students still rely on truncated research processes and produce "regurgitation reports." As one scholar explains, "faculty dissatisfaction with the quality of students' academic research abilities is not limited to first-year students. . . . When discussion turned to the quality of student research, professors all across campus were disappointed and frustrated" (Jenson 108). In contrast, many faculty believe that current students are more savvy researchers because of their experience with online networks. Given the explosion of digital information sources, do students still see the research paper as a regurgitation report and rely on efficient, low-cost strategies for locating source material?

The quick answer to this question is a resounding yes. A number of current studies suggest that students' approaches to the research paper assignment have not changed; in fact, the expanding number of digital resources available to them may contribute to their superficial research strategies. For example, according to a study conducted by researchers in the Project Information Literacy Project, results from a survey of 2,318 students reveal that the majority of the students they studied rely on two sources when tackling a research paper assignment: 1) internet sources, such as Google and Wikipedia and

2) classroom materials, such as hand-outs, lecture notes, and textbooks. Researchers characterize these limited information-seeking behaviors as a "less is more" strategy for confronting the flood of information sources available on the Internet (Head and Eisenberg, "How College Students" 21). They found that students prefer sources that are brief, do not include conflicting views, and appear to be current (although they rarely tried to locate information about the publication dates of Web sources). These arhetorical, context-free criteria for evaluating sources are especially troubling given the ever-increasing amount of digital information available on the Web. The students they studied failed to question a source's credibility; they did not acknowledge the need to examine the authority or expertise of Web authors and they did not question the often hidden agendas of the sponsors of Internet sources (Head and Eisenberg, "How College Students" 33). In another study of 50 students, researchers found that many students they studied relied solely on the Internet, believing that Web sources are preferable to more traditional academic sources because of the assumption that Internet resources are more current or up-to-date simply because they are online or on the Web (Grimes and Boening 16).

In a study on the "Google Effect," Patrick Corbett examined students' stubborn reliance on unacademic research sources, Google in particular. He found that the students he studied in first-year composition courses had serious misconceptions about the differences among Google, the Internet, and other public digital resources. These misconceptions led to naive beliefs; for example, "(1) their sense that Google is more dependable than library research tools; (2) their belief that it provides more appropriate feedback from searches; and (3) their view that it is more time-cost effective for achieving adequate results" (Corbett 267). These findings are similar to those from another study in which students reported that finding relevant information on the Internet was "very easy" when compared to navigating library research sources. In fact, some students claimed that they turned to the Web because they could not find current information on

their topics when using the library's resources (Head and Eisenberg, "How Students Seek" 33). Finally, Dennis Isbell, an associate librarian at Arizona State University who has worked as a reference librarian for over twenty years, reports that "most students still believe research is simply gathering some sources almost at random, taking a quote from this source, one from another, and so on, and then stringing them together with some loose transitions" (5). Clearly, the low-cost "compile information approach" for conducting research and the "regurgitation report" are alive and well, based on current research. This evidence of students' superficial strategies for conducting research and for writing research-based assignments underscores the need for all educational stakeholders to work together to address these deficits and to ensure that students become information literate during their college careers.

Case Studies: Designing Effective Research Paper Assignments

Using case studies of three students completing research assignments,[1] I will examine in depth the strategies that students often rely on when confronted with research-based assignments and will use my findings and those of other researchers to suggest how teachers can design assignments that help students to become information literate. My research involved randomly recruiting students from courses across the curriculum that required a research-based paper. Once students agreed to participate, I asked them to write process logs to me and to deliver them at least three times a week. I told students that these notes should document any thinking, talking, writing, or researching they did related to their research-based assignment, from the time they received their assignments to the time they finished and handed in their papers. (Students were paid a small stipend for their participation and signed consent forms, allowing me to use their work.) In addition, I assured them that their contributions would be anonymous (each name is a pseudonym) and that I wanted reports of their real

processes, even if their log entry said "I thought about my assignment but didn't do any work."

Ann: Dumb Busy Work

Many of the undergraduate students I followed had efficient, low-cost strategies for tackling a research paper assignment, similar to those described in the studies presented earlier. For example, Ann, a freshman drama major enrolled in an undergraduate course entitled The History of Drama, was required to write a five-to-seven-page paper on any aspect of eighteenth-century British theater; her teacher simply told his students the general focus for their research, the page length, and the due date. Over half of Ann's process logs written to me were guilt-ridden and angry explanations of why she kept postponing working on the paper and why she hated writing research papers in general. Her unexamined definition of the research paper assignment suggests why she found it so distasteful.

> . . . I just hate writing it down. It's so damn tedious. . . . It's coming from some book and all I'm doing is regurgitating information the teacher already knows. So why bother? I know how to use the English language (better than most people), I know how to write, I know how to look up information . . . .[the professor] has read everything there is to read in the library, so why the hell do we have to do this dumb paper when all it is is busy work! (Nelson and Hayes 10)

Given her unexamined, limited (and limiting) assessment of the research paper, it is not surprising that Ann expended minimal effort on the project. For example, Ann described her simple process for choosing a paper topic: she literally "let her fingers do the walking." She went to the call number for British theater, skimmed through six history books that included sections on eighteenth-century drama, and chose her topic through an efficient process of elimination. One topic that caught her interest

was rejected because it was mentioned in only one of the six books she had haphazardly chosen, and instead of looking for other possible sources, she concluded, "Oh well I guess I can't do him" (Nelson and Hayes 8). She reported that after more skimming, she noticed a large section on mime in one of her books, quickly skimmed the others, and triumphantly wrote "BINGO, I found my topic." Ann reported that the night before her paper was due she was able to read sources, take notes, compose and type a six-page paper in approximately ten hours in one sitting (with—she told me—plenty of breaks for pizza and gripe sessions with friends). In her last log entry to me she included a postscript: "The computer file name for this paper is 'Extremely Boring'" (8).

The implicit criterion that the students, like Ann, used for selecting a source was how easily information could be extracted. One student explained her strategy for determining this: skim the index for your topic; if information is sprinkled throughout the book across distant pages, then reject that source "because you would have to read too much." She explained that your goal is to find sources with chunks of information that can be read quickly and extracted easily. Another student who used a similar method praised this approach because sometimes you would not even have to read and comprehend the source, implying that all that was required was the cutting and pasting of source material (Nelson and Hayes 10). More recent research supports this image of research as a process of extraction and regurgitation. In a study conducted in 2000, researchers investigated 500 college students' research practices. The authors focused on several questions, including, "What makes a source most desirable to student researchers?" They report that the primary criterion for choosing a source is "Access, access, access." When asked to rank their criteria for evaluating a potential source, students ranked the following qualities highest: "source is easy to understand; source is easy to find; source is available" (Burton and Chadwick 321). These researchers' findings are supported by Necia Parker-Gibson in her article, "Library Assignments," in which she reports that "researchers tend to use whatever is available, is least difficult to

use, or offers them the most material for the least amount of effort." She claims that "most students . . . are dedicated to the Principle of Least Effort, also called the Principle of Information-Processing Parsimony, documented by Thomas Mann." Ann's limited approach to selecting sources mirrors these researchers' findings, in particular, the Principle of Least Effort.

Ann approached her research assignment as a one-night stand. She began reading sources and taking notes the day before her paper was due, explaining that "writing the draft was the easiest part . . . . All I had to do . . . was paraphrase the notes, insert fragments into the right places, and put it in paragraph form" (Nelson and Hayes 9). In her process logs we find echoes of other educators' descriptions of student's approaches: "regurgitation reports" (Aley 119); "library-go-fetch" essays (Kynard 135); "hollow imitations of research, collections of information gleaned from sources with little evaluation, synthesis or original thought" (Brent); "the act of producing, as effortlessly as possible, a drab discourse, vacant of originality or commitment" (Davis and Shadle 419). Ann's rant about the pointlessness of the research paper assignment makes sense when we look at the legacy of the research paper as taught in many elementary and high schools. Mary Ellen Giacobbe, a primary school language arts instructor, admits that many teachers promote a superficial view of the research paper when they allow students to "copy some stuff from a book" and then "draw pictures and maps" (qtd. in Nelson, "The Scandalous Research Paper" 8). Giacobbe admits that even in higher grades students turn in research reports that are often copied from encyclopedias or other sources (8).

These early report-writing experiences may have influenced Ann's dismissal of her research paper assignment for the History of Drama course as "busy work." Ann's goal is to demonstrate to her professor that she can retrieve and package information. This goal did not push Ann to develop a thesis or personal perspective on her topic. Ann's familiar approach precludes thoughtful analysis of source material and may not promote learning. In a study of the role that writing can play in shaping learning,

researchers found that the more that information is manipulated through writing, the more likely it is to be understood and remembered (Langer and Applebee 69). Thus, when students like Ann approach research assignments in this limited way, by piecing together chunks of undigested information, they may not learn anything about their research topic.

My own research supports these findings: when I asked students in my case study to explain how they chose a source, one student explained that your goal is to find sources with chunks of information that can be read quickly and extracted easily. Other students chose this limited approach because, as one student explained, sometimes you [will] not even have to read and comprehend the source, implying that all that was required was the cutting and pasting of source material (Nelson and Hayes 10).

Burton and Chadwick challenge teachers from across the disciplines to "shape research tasks that lead students away from the one-night-stand research paper" (325) by creating assignments that lead to genuine inquiry; such assignments require evaluation, synthesis, and original thought. Jean Donham, a professor of library science, argues that our current model of education does not encourage this kind of active engagement. In contrast, she explains that "learning is measured in scores on tests externally designed and scored. Such externalization of decisions, about teaching and learning, stands in contrast to the foundation of lifelong learning" (Donham 14). She contends that this "other-directed era in education" can have a negative effect on student engagement (15). Using the work of Munns and Woodward, she explains that "in many traditional settings, students feel powerless in the classroom" (Donham 15). These researchers identify certain "discourses of power that affect student's self-perception as learners" (15). These include:

Knowledge- Why do I have to learn this?–resulting in disinterest in the task.
Ability- I don't believe I can do this–resulting in low aspirations.

Control- feelings that the student has little or no control over what he/she will do.

Voice- lack of say over learning as the teacher controls the content and sits in judgment of the performance. (Donham 15)

If we look at Ann's low-cost strategies for researching and writing her paper within the context of these different "discourses of power," we can see that in many ways her low-investment, one-night stand approach is quite sensible, even efficient. Faculty across the curriculum need to design activities and assignments that put students in positions of power, inviting them to engage in what Donham describes as a "self-directed process that begins with self-generated questions and curiosity, includes self-directed inquiry and exploration, and concludes with self-measured success" (14). Ann's unexamined assumption that her research paper assignment was dumb busy work because all "[she's] doing is regurgitating information that the teacher already knows" reveals her lack of engagement and, perhaps more importantly, her sense of being powerless as a learner in the context of this assignment.

The development of the Information Competency Standards for Higher Education was influenced by the Boyer Commission Report, *Reinventing Undergraduate Education* (Maughm 77). This report has become a platform for those who argue that we must change our fundamental goals for higher education (particularly if we want students to embrace research as a valuable process of discovery). Inspired by the work of John Dewey, educational reformers suggest "that deep learning results not from the transmission of information from faculty to students but, rather, from independent discovery carried out by students under the guidance of faculty mentors" (Maughan 78). Other scholars agree. The increasing focus on information literacy, both in composition courses and across the curriculum, changes the way we define teaching and learning. For example, scholars who argue for the centrality of information literacy in undergraduate education contend that "[I]n this next century, an 'educated' graduate will

no longer be defined as one who has absorbed a certain body of factual information, but as one who knows how to find, evaluate, and apply needed information" (Brevik qtd. in Eisenberg, Lowe, and Spitzer 177). They claim that the focus on information literacy should lead to a shift in higher education from focusing on the presentation of content to focusing on students' learning processes (177).

Catherine: Faculty Collaboration and Personal Agency

The following case study demonstrates how "independent discovery" and meaningful engagement can be achieved with the guidance of a faculty mentor and with a carefully designed assignment. The case study of Catherine, a science major enrolled in an introductory physics class, illustrates how teachers can craft effective research assignments that lead to deep learning and genuine inquiry. Catherine's research topic was chosen from a list of "cutting-edge" topics in physics prepared by her teacher; she chose to investigate the detection of invisible light and inaudible sound. In addition to writing a ten-to-fifteen-page paper, students were also required to give a twenty-minute lecture on their topic one week before their papers were due. The lecture and paper were each worth one hundred points, the same weight as a major course exam. To help guide his students' research, the teacher provided students with a list of key words to use when searching for source material and suggested that Catherine start with the *Encyclopedia of Physics*. Over a month before her paper was due, Catherine began thinking about her research project and wrote log entries to me about her work. She reported that while she was in the library doing work for another assignment, she saw the *Journal of Biomedical Applications* and "decided to use some examples from there in the speech as color" (Nelson and Hayes 11). This reveals that she was concerned about finding information for a particular purpose, to provide colorful and relevant examples for her audience. Catherine's goal for choosing this information also reveals that, as a researcher, she "assumes an approach that is

analytical and/or interpretive" (Donham 14) by asking "what meaning can I make of these findings?"

While researching her topic, she relied on her professor's advice, finding the encyclopedia he recommended and looking up entries for the four suggested key words he provided. She also used the key words to create a quick outline for her talk "to give myself some limits in researching," she reported to me. This outline listed the kinds of information she decided she needed: an explanation of invisible light and inaudible sound and ultrasonics, the history and discovery of ultrasound, ultraviolet and infrared light, and their applications. Thus, after conducting preliminary research, Catherine determined what information she needed to meet her own goals, unlike students like Ann, who allowed their sources to determine the focus and scope of their papers. Catherine's research process was recursive and goal-driven. For example, she checked the bibliographies of each source for relevant cross references and, before leaving the library, jotted down plans for follow-up research. She used the keywords provided by her teacher to organize her research and note taking and added other categories as her research progressed. Her primary goal was to understand material and not simply to transcribe it.

Interestingly, she gauged her understanding by explaining her topic to her mother, revealing her engagement and clear goals:

> I spent about ten minutes telling her what I'd set out to look for, interesting parts of what I'd found so far, and how much more I needed . . . . It was like a preliminary practice for the speech, and helped reassure me that I can indeed speak "physics-eeze" without notes or an outline and still have it make sense. (Nelson and Hayes 12-13)

Again, Catherine's concerns reveal her development as an information literate learner: her goals appear to be "grounded in [the] recognition that information literacy emerges from a disposition of inquiry—what do I want to know about?" By

explaining her topic to an uninformed audience–her mother, she "establishes a stance of self-assessment–how do I know that I have the information I need?"

The final outline for her speech consisted of six pages of sketchy notes and instructions to herself. She told me that she planned to speak largely from memory and to explain technical information in her own words. Not surprisingly, Catherine's preparation for the lecture helped her to write the paper. She reported specific plans for her paper: "It will have the same outline as the speech, with the exception of the introduction and a slightly more involved/technical mode of explaining things, as my audience is no longer twenty-five restless teenagers but a professor" (Nelson and Hayes 14). She composed her paper over a period of three days; given the amount of research and preparation completed for her lecture, it is not surprising that she reported having little trouble composing her paper. Her teacher gave her high marks for "knowledge of sources and literature, understanding of basic concepts, extensive treatment of subject, and originality of ideas"; these were some of the criteria for evaluating papers provided to students when they received their assignments. These criteria and the required student presentations reveal how a teacher can empower students as learners. In addition, this assignment is process-oriented and requires critical engagement with source material: the teacher helped structure the research process through his suggestions for finding sources and required students to understand and adapt material rather than simply extracting and transcribing it. Students were expected to use critical thinking to organize and transform source ideas to make them accessible and interesting for their classmates. Catherine's approaches confirm researchers' claims that independent discovery is "best developed through regular exposure to assignments that are process oriented and that require critical thinking" (Zabel 39). In addition, Catherine had the opportunity to present her findings to an audience of peers and to her professor, an opportunity that no doubt contributed to her investment in this assignment.

This case study, when combined with Ann's, demonstrates the essential role that task interpretation can play in how students evaluate and complete a research-based assignment. In Ann's case, her professor did nothing to challenge her tacit assumption (one shared by many first-year college students) that the research paper was busy work that simply required "regurgitating information that the teacher already knows." In contrast, Catherine's professor created an assignment that enabled her to engage in genuine, goal-directed inquiry and gave her personal agency over her learning by requiring her to transform what she learned so that she could teach her uninformed classmates. Unlike Ann, Catherine's professor facilitated her ability to participate in the "discourses of power" described by Donham (15). For example, the extensive research guidelines provided by her instructor allowed Catherine to feel confident in her ability to engage in genuine inquiry that led to knowledge-making. In addition, the required lecture gave Catherine the opportunity not only to set personal goals, but also to have an actual voice in what she learned.

Catherine's story illustrates how thoughtfully designed assignments can help students to become more sophisticated, goal-oriented researchers who meet the competency standards for information literacy for higher education as described by the Association of College and Research Libraries. Catherine was able to determine the information she needed, access it effectively, evaluate the information according to her goals, incorporate the material into her knowledge base, and use her research effectively to accomplish a specific purpose—to teach her classmates and meet her teacher's criteria. In addition, Catherine demonstrated an understanding of the last competency when she responded to her teacher's request that she document a particular section of her essay with extra care because he told her that "he had learned something new from her talk." She wrote to me, saying "I'm honored that [I] told him something new, but—drat—now I'm going to footnote this paper into the ground and I usually take a casual approach to such endeavors" (Nelson and Hayes 14).

Clearly, she now understands the importance of using information carefully and ethically, an understanding supported by her teacher's positive comments and high expectations. Catherine's carefully designed, engaging assignment demonstrates that faculty from across the curriculum need to design activities and assignments that put students in positions of power and require recursive, self-directed research.

Helen: Process–Based Assignments

The strategies of another case study student, Helen, again reveal the value of carefully designed, process-based assignments. The freshman-level class, Reading Texts, that Helen took differed from more traditional introductory literature courses. Rather than focusing on a particular literary period or genre, her instructor, Professor Greene, explained the goal of the course in his syllabus: the aim of the class is to "study texts as culturally produced and reading as a culturally-acquired process." Shortly after the middle of the semester and over a month before papers were due, Professor Greene handed out a one-page description of the research paper assignment. The stated goal for the five-seven page research paper was to "give [students] the opportunity to investigate the repertoire of Victorian texts and to use this information to interpret one or more of them." In his instructions he emphasized the kind of paper he wanted students to produce: "Remember that a research paper is an argument. It is NOT a report of FACTS, but a careful marshalling of the judgments, opinions, and ideas of others to support your own position." In addition, he explained that a written proposal was due three weeks before the final paper; in this proposal students were expected to indicate the topic of their research, the argument they expected to make, the work or works they would be interpreting, and a bibliography of sources they had used thus far (Nelson, "Reading Classrooms" 421).

Six weeks before her paper was due, Helen reported that she borrowed a book on life in Victorian England from her aunt; she explained that she planned to use this book to "get some

background on the Victorian period" before she tried to choose a literary text to interpret. Even though Helen had clear research plans, she reported struggling to understand what her teacher expected in students' papers. During class, she asked her teacher to explain the assignment again, and then she reported a kind of epiphany: "I think [the professor] wants us to use others' arguments to develop our own. So, in a sense, this isn't a research paper (i.e., telling what's already been said, like in high school) but rather an argument that requires research" (Nelson, "Reading Classrooms" 421). Note how clearly Helen describes her previous definition of a research paper: "telling what's already been said," a belief also shared by Ann and others. Once the goal of her research-based assignment was clear, Helen returned to the library with a better focus and was able to compose a brief prospectus for her essay in which she explained that she was using historical material to analyze the woman in Hardy's poem, "The Ruined Maid"; she claimed that Hardy presents an accurate description of a prostitute's life during the Victorian period in England. This prospectus was a requirement for all students, and each one had to be approved by the professor before students could continue working on their projects. Perhaps most importantly, the prospectus forced students to read broadly and then to focus in and engage with their chosen research question early in the research process. This assignment required students to engage in the six "stages of learning" identified by researchers as essential to the inquiry process:

Initiating- opening the inquiry;
Selecting- selecting a general topic;
Exploring- exploring for background information;
Formulating- forming a focus;
Collecting- synthesizing information about the focus; and
Presenting- organizing information and ideas to share with others. (Kuhlthau and Maniotes 18)

Once students had turned in their prospectus statements and had them approved, they returned to research and collect more material about their literary topics, leading to the deep learning and individual discovery championed by Boyer's followers (Maughm 77). In fact, while reading more deeply about Victorian women and the social pressures they faced, Helen decided to change her position completely. In her revised proposal she wrote, "I think [Hardy] may be showing what the public believes to be reality about prostitutes, but he does not accurately portray their total degradation" (Nelson, "Reading Classrooms" 422). Helen's research process was recursive and led to a more in-depth understanding of women's roles in Victorian England. Her approach reflects what other scholars value about the research paper assignment: "the research paper would seem potentially the single most extended instance of doing, making, and meaning in an educational setting" (Donavan and Carr 213).

This assignment successfully challenged Helen's preconceptions about the research paper, helping her to recognize and reject the approach she had learned in high school. In addition, it required students to engage with research material early in the process, essentially eliminating the one-night-stand approach. At the end of the term, Helen reported that the class watched and discussed the movie *The French Lieutenant's Woman* in the context of Victorian mores. Helen reported that she "was able to contribute a lot to the discussion based on [her] research." She went on to explain that "Professor Greene seemed pleased with some of the things I mentioned, so I included the ideas he seemed to like into my paper" (Nelson, "This Was an Easy Assignment" 18). While much less formal, this opportunity to share her research with her peers mirrors what Catherine's professor did, allowing students to share their research findings and gain ownership over what they had learned under the guidance of a faculty mentor.These three students' stories support the contention that "well-designed assignments are central to student learning because they provide opportunities for active engagement with subject content, challenging students to think critically, reflect on their processes

for finding and using information, and take the necessary steps to take charge of their own learning" (Rockman 18). Clearly, the assignments designed by Catherine's and Helen's teachers provided these opportunities for engagement and self-directed learning.

I believe that another factor can affect the quality of students' engagement with the research paper assignment. For many students, like Ann, the research process is a solitary and often pointless experience–they collect sources and write papers without ever interacting with other people. As Ann said, the process simply involves "regurgitating information that the teacher already knows." For Ann and others, research is a one-way process: the student transmits research material to the teacher; the teacher transmits a grade to the student. As we have seen, too often the student relies on cutting and pasting source material and never really engages with the topic at all: the "regurgitation report." These limited views of the research paper may result from feelings of powerlessness, including a lack of control over what students are able to do, and a "lack of say over learning as the teacher controls the content and sits in judgment" as the sole audience and judge (Donham 15). In contrast, Ken Macrorie provides another, more collaborative view of the research process: he asserts that as researchers "we learn alone, and we learn with others–most powerfully when they are learning from us" (150). When given the chance to teach others, students, like Catherine, are not only able to take ownership of their learning, but they can also approach research as a collaborative–not isolated–experience.

Defining Information Literacy: Research-as-Recovery versus Research-as-Discovery

Critics of the traditional research paper argue that students' superficial and limited approaches to the research paper assignment are inevitable, given how such assignments are presented. They claim that most faculty define student research as

"research-as-recovery," not research-as-discovery (Bizzell and Herzberg 303). Ann's professor presented his research assignment in this way, providing students with a subject matter, page length, and due date. Ann's sarcastic dismissal of her assignment as "dumb busy work" makes sense based on the arhetorical assignment she received. Too often research paper assignments focus nearly exclusively on these superficial requirements rather than on the wider purpose of conducting research. The following study (completed in 2010) confirms this point: researchers conducted a content analysis of 191 handouts for research paper assignments from 28 United States colleges. This analysis revealed that the majority of handouts focused on the mechanics of writing a research paper rather than necessary strategies for identifying and using credible sources effectively (Head and Eisenberg, "How Handouts" 2). Generally, the researchers found handouts provided standard information about page length, how to structure the finished product, and what documentation style they should use. They found that "despite the seismic changes in the way information is now created and delivered, 83% of the handouts in [their] sample called for the standard research paper" (3). In addition, the researchers found that only 16% of the handouts discussed what research meant within the context of the assignments students received (26). Not surprisingly, few handouts presented research as a "critical process of inquiry." Few explained why students were being required to complete a research paper in a particular course. Few explained what learning experiences the instructors wanted students to engage in. The researchers claim that students need to understand the whys of research in order to challenge their superficial, low-cost approaches and to help them see research as an "iterative process that requires critical thought, curiosity, ongoing discovery, and tenacity" (Head and Eisenberg, "How Handouts" 27). They conclude that the large majority of the handouts they analyzed failed to present research "as a form of intellectual inquiry and discovery" (26). In addition, they noted that few handouts required students to present their research in other formats, such

as multimedia or oral presentations. More specifically, they note that few handouts in their sample "assigned oral (7%), multimedia (2%), or poster presentations (2%)" or other nontraditional formats (28).

Another scholar attempts to trace the history of this limited form: Carmen Kynard claims that early on, the research paper was tied to gaining membership in a discipline; the professor represented a particular disciplinary community and the student played the role of an apprentice (Kynard 147). She describes the evolution of the research paper assignment into what it is today:

> As the research paper became more routine, the focus moved away from an apprentice model to a mode of production. Knowledge in the disciplines was not regarded as politically constructed and actively situated by conflicting social agents. Thus, the research paper as a genre was really akin almost to an exam—students were simply expected to display facts that they had learned and not enter the 'rhetorical universe of a discipline' and thus, the emphasis was on form, length, and sources. (147)

When combined with the previous findings about handouts for research papers, Kynard's research suggests that the traditional, arhetorical "research-as-recovery" model of the research paper still plays a prominent role in undergraduate education across the disciplines.

Faculty who want to challenge students' cynical and limited views of the research paper assignment must find ways to create research assignments that discourage the one-night-stand approach and require critical evaluation of sources and effective use of information to achieve self-determined goals, in other words, research-as-discovery. Given the tenacity of the traditional research paper assignment, such efforts are even more important.

Alternative Research Assignments

A number of composition scholars provide alternatives to the traditional research paper. Ken Macrorie's I-Search paper asks students to write a narrative of their research process, including why they chose their topic–or, as Macrorie says, why their topic chose them–the "story of the hunt," and what they learned (64). Peter Elbow's "collage writing" encourages students to engage in a non-linear, open-ended process. Elbow argues that collage writing helps to delay students from arriving at a thesis too quickly or from ignoring conflicting ideas (Aley 121-122). In *Research Revisited*, Shelley Aley describes her hypertext research assignment, likening it to Elbow's collage writing. Her research project asks students to investigate a current, controversial issue and then use their findings to "publish a piece of [online] writing arranged on multiple pages with hyperlinks leading to and from each page" (124). At the end of the term, students publish their hypertext projects on a website created by using Yahoo! GeoCities' Page Builder online software, a site that allows students to publish their work outside of school boundaries (124). Each of these assignments emphasizes the role of personal discovery in research assignments.

In "Discovery Projects: Contextualized Research Experiences for College Sophomores," Nancy Shapiro and Katherine McAdams contend that "if students are investigating something that has already engaged their curiosity, they are much more likely to 'own the question' and experience the excitement of discovery" (125). They describe another "discovery project" involving the creation of groups of peer researchers who learn research skills from trained mentors, meet to share their research, and publish their findings as poster presentations at a campus undergraduate research fair (127). They emphasize that these projects provide many opportunities for "one-on-one interactions between students and mentors" (127).

Other alternative assignments take research outside of the confines of the classroom. For example, Tim N. Taylor argues that the research paper can be seen as an "act of citizenship" when

students are required to investigate local problems and write proposals to nonacademic readers. Service-learning and civic-engagement assignments require students to use their research to make a difference outside of the classroom. Naylor quotes one of his student's anonymous comments about his proposal/research assignment: "The research paper was actually real. We made our writing do something" (53). In "Teaching the Research Paper for Local Action," Carl Borsheim and Robert Petrone describe a research paper project that asks students to find a local question or problem they want to address and then conduct nontraditional forms of research—such as interviews, surveys, archival or primary-source research, and personal observations—to help them produce appropriate texts (80). These included letters to the editor of local newspapers, PowerPoint presentations for school and community organizations, or brochures for specific audiences (81). This community-based research project is similar to Jennie Cooper's "client-centered approach" in which people from the community are invited to submit research questions or topics to student researchers. Students then deliver their completed projects to the clients and, Cooper explains, many have been published in local newspapers or used by clients in other ways (73).

Current textbooks on research-based writing also challenge definitions of the research paper or provide nontraditional assignments that require research. For example, in *The Curious Writer*, Bruce Ballenger begins his chapter on writing a research essay by addressing students' aversion to writing research papers; he acknowledges that most students dislike research paper assignments because they believe that whenever research-based facts are required in a paper, "the writing is generally boring" and because they believe that their opinions are not valued and should not be included in a research paper (391). Ballenger challenges these assumptions regarding source-based writing early in the book and encourages students to embrace "the idea of academic inquiry and the habits of mind . . . that lead [them] to see how writing can be a process of discovery" (11). The three habits of

mind that students should cultivate are "start with questions, not answers; suspend judgment; search for surprise" (11-14). Both Catherine's and Helen's assignments encouraged them to embrace these three habits of mind. They both started with questions and engaged in recursive, open-ended research—research that allowed them to see how academic writing "can be a process of discovery."

In contrast, Ann's assignment led to resentment and resistance, no doubt because the teacher simply assigned a general topic (any aspect of eighteenth-century British theater) and a due date. William Badke, an Associate Librarian, argues that teachers must craft assignments that show students that research can be "magical" when seen as a quest for answers to a problem that matters to them (53). He blames teachers for students' resentment and boredom when they are assigned traditional research papers, explaining:

> Most research assignments are programmed to sap the life out of those who do them. Students often complain that they don't understand what the professor wants from them and that their research assignments are among the most tedious and nerve-wracking tasks they have to perform. (Badke 53)

Ann's final assessment of her assignment corroborates Badke's views; her last log entry to me included a postscript: "The computer file name for this paper is 'Extremely Boring'" (Nelson and Hayes 8). Badke argues that "in any research task worth being called 'magical,' . . . research stops being a dreary exercise in compilation and becomes a quest for what we must yet discover. The magic is in the quest" (53). When we review Catherine's and Helen's research assignments, we can see that, indeed, the magic is in the way a research task is crafted.

Based on the research findings discussed above, the characteristics of successful research assignments appear to include the following: 1) a clear definition of the assignment and the teacher's goals and expectations; 2) teacher-recommended

resources or search terms to get students started on their research; 3) process-based assignments that require students to begin researching their topic early: this can include asking students to provide a prospectus, an annotated bibliography, or to give an oral report before the final paper is due (this requirement is especially important, as it eliminates the one-night-stand approach for completing a research assignment and requires students to approach research as a recursive process of discovery); 4) the opportunity to share research findings with other audiences besides the teacher, thus empowering students as teachers and learners; 5) collaboration among students and mentors, such as teachers and librarians, so that students do not approach research as a solitary task of collecting information for the teacher-as-examiner. These qualities of effective research assignments support educational reformers' beliefs "that deep learning results not from the transmission of information from faculty to students but, rather, from independent discovery carried out by students under the guidance of faculty mentors" (Maughan 78).

Conclusion

The increasing focus on information literacy, both in composition courses and across the curriculum, can change the way we define teaching and learning, from delivering content to passive learners to valuing student engagement and inquiry-based learning. How can educational stakeholders help teachers to understand and challenge the limited, often truncated approaches many students rely on when confronted with a research paper assignment? Collaboration is essential: teachers—both in composition and across the curriculum—librarians, and administrators must work together to educate stakeholders about the role that information literacy can play in empowering students as learners and in enacting the beliefs of educational reformers who challenge traditional models of learning.

Research findings underscore the research paper's dominant role in the scholarly lives of undergraduates from across the curriculum (Burton and Chadwick 316). Unfortunately, Burton's

and Chadwick's research also revealed that many teachers across the disciplines believe that they are not responsible for teaching students how to conduct research, claiming that this important task belongs to the English composition program alone (320). However, as most writing teachers know, they can teach students how to be effective researchers, but students often fail to transfer their knowledge to other classes, invoking the familiar excuse that "this isn't an English class." Faculty across the curriculum must fight these attitudes and impress upon students the value of information literacy, not only as an academic skill, but also as a skill for lifelong learning and success. As one disciplinary specialist says, "we must stop assuming that [undergraduates] have the same background and experiences that we have and start teaching them how to meet our research objectives" (Jenson 109).

Scholars in the Writing Across the Curriculum (WAC) and Writing in the Disciplines (WID) movements have taken up the call by examining the genres produced across disciplines and the role that research plays in the creation of knowledge in different discourse communities. They use this research to reveal the social forces that shape research in a range of disciplines, complicating the traditional model of the research paper as a static, arhetorical form.[2]

Of course, librarians play an essential role in creating information literate students: "a dynamically evolving information/knowledge universe require[s] an integration of the librarian's qualifications" (Owusu-Ansah). When working collaboratively with teachers and students, librarians can offer strategies for enhancing students' (and teachers') research practices. Deborah L. Pierce, a reference and instruction librarian, contends that librarians should focus "more of [their] expertise and energies on training the trainers—that is, influencing the teaching faculty" (234). She stresses the importance of offering faculty the resources they need to integrate information literacy effectively into their courses.

In *Information Literacy: Essential Skills for the Information Age*, Eisenberg, Lowe, and Spitzer quote Ralph A. Wolff—executive

director of the Accrediting Commission for the Western Association of Schools and Colleges. Wolff claims: "Embracing information literacy is . . . an institutional concern. The faculty should play a vital role in defining the content and place for information literacy within the curriculum. It cannot avoid the issue if students are to be prepared effectively for the future" (qtd. in Eisenberg, Lowe, and Spitzer 30). What follows is just a sample of projects undertaken by colleges to integrate information literacy across the curriculm. The University of Arizona relies on a model of "course-integrated instruction"; research projects for a range of disciplines have been collaboratively designed by faculty and librarians. The university has used this collaborative model in seventeen disciplines, including anthropology, geography, linguistics, materials science engineering, and political science (Eisenberg, Lowe and Spitzer 139). Large university systems have taken on the task to build information literacy into their curricula. For example, The Council of Library Directors of the California State University system conducted extensive research on the best ways to foster information literacy and recommended policy guidelines to the chancellor. A Working Group on Information Competence collected information from experts from the California State University campuses who had initiated programs for achieving information literacy as part of their undergraduate curricula. Based on their findings, the Work Group defined a set of competencies that all CSU campuses and faculty should adopt and implement across the curriculum (Eisenberg, Lowe, and Spitzer 140). The State University of New York and their Council of Library Directors System have also identified core information literacy goals and have encouraged their adoption in courses across the curriculum at their universities (142). An important resource for faculty and librarians is the website created by the Institute for Information Literacy, "Characteristics of Programs of Information Literacy That Illustrate Best Practices: A Guideline."

Clearly, colleges at every level have embraced the "old axiom 'knowledge is power,'"; this could easily be the motto of

information literacy-based learning (Williams, Goodson, and Howard 518). As stated earlier:

> Individuals who are knowledgeable about finding, evaluating, analyzing, integrating, managing, and conveying information to others effectively are held in high esteem. These are the students, workers, and citizens who are most successful at solving problems, providing solutions, and producing new ideas and directions for the future. They are lifelong learners. (Rockman 2)

Given the growing national support for promoting information literacy in higher education and beyond, I believe educators would agree that "it takes a whole campus to produce an information-literate college graduate" (Kuh and Gonyea 270).

Notes

[1]These case studies were part of a larger research project carried out in 1988. The research findings based on these students' experiences may seem out of date; however, these students' stories about how they interpreted and approached research-based assignments reveal that, though the material conditions for researching have changed since 1988, many students' practices have not. When combined with current scholarship on information literacy, I believe that these three students' experiences provide valuable insights for current teachers and scholars who are interested in learning strategies for developing information literate undergraduates. The students who served as participants in my study attended an elite private college, one that accepts a small percentage of the top high school graduates in the country. In other words, they were serious students who expected to be challenged and to work hard in their courses.

[2]The WAC and WID movements initiated by several composition scholars add to the Information Literacy movement by revealing the situatedness of scholarly research and the variety of genres employed by disciplinary specialists. For example, see *Genre Across the Curriculum* edited by Ann Herrington and Charles Moran; "Ways of Knowing, Doing, and Writing in the Disciplines" by Michael Carter, and *Shaping Written Knowledge* by Charles Bazerman.

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