

Reintroducing Students to Good Research

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November 7, 2001

I'm very pleased to be here today for a campus-wide conversation about something central to liberal learning. Lately it has acquired the label "information literacy," a phrase I'm not particularly fond of for two reasons: the words "information" and "literacy." The first misses the point that what we're really talking about is the process of turning information into knowledge; the second word is overused, politically charged, and implies some sort of remedial intervention. Neither of these words speaks to what liberal arts colleges do—and have done for many years. I rather prefer the very straightforward language of your mission statement: "We encourage students to read critically, reason analytically, communicate persuasively, and, above all, to think for themselves." What we'll be discussing today is how best to give students the skills, the habits of mind, and the confidence to think for themselves in a rapidly-changing world.

Assumptions about research as part of an undergraduate education

When we started rethinking how we do this at Gustavus Adolphus College, we first sat down with faculty and defined some assumptions we have about the role of independent inquiry in an undergraduate education.

First, we think research, broadly defined, is a valuable part of an undergraduate education. Even at a rudimentary level, engaging in research implicates students in the creation of knowledge. They need to understand that knowledge isn't an inert substance they passively receive, but is continually created, debated, and reformulated—and they have a role to play in that process.

Second, taking a leaf from our experience with writing across the curriculum, we recognize that research is situated in disciplinary frameworks and needs to be addressed in terms of distinct research traditions.

Third, we believe research is a complex and recursive process involving not just finding information but framing and refining a question, perhaps gathering primary data through field or lab work, choosing and evaluating appropriate evidence, negotiating different viewpoints, and composing some kind of response, all activities that are not linear but intertwined.

Fourth, and a natural corollary, is that learning to conduct inquiry is itself complex and recursive. These skills need to be developed throughout a research project and throughout a student's education.

And finally, the hybrid nature of libraries today requires students to master both traditional and emerging information formats, but the skills that students need to conduct effective inquiry—for example, those mentioned in your mission statement of reading critically and reasoning analytically—are the same whether the materials they use are in print or electronic.

All of these assumptions led us to the conclusion that teaching these skills has to be a more intentional and collaborative effort between librarians and faculty in the disciplines. It has to embrace the totality of the research process, not just focus on finding and handling information. And our approach must recognize that students have neither the disciplinary knowledge base of the faculty or the tool and systems knowledge that librarians have and therefore our research processes may not be appropriate models for our students.

Reintroducing research--without relying on traditional "research papers"

To design effective research experiences for our students, we need to take into account the depth of their ignorance. Imagine being told you had to contribute a paper to a conference in a field other than your own. How would you know what kinds of research questions would be appropriate? What evidence would be considered authoritative and persuasive? What discourse conventions would you need to observe? How would you avoid totally humiliating yourself? Yet in a sense, that's what undergraduates are faced with when asked to choose a topic and write a paper on it. They simply don't know enough to do a good job without careful preparation. It's no wonder, unfamiliar as they are with the production of scholarly

knowledge, with very little sense of how texts and ideas come into being, that they often believe research is merely transcription. Or, as Robert Schwegler and Linda Shamoon have put it, it's information compiled for an expert audience by novices pretending to be experts. Too often, traditional research paper assignments defeat their own purpose by implying that research is not discovery, but rather a report on what someone else has already discovered. More than once I've had to talk students out of abandoning a paper topic because, to their dismay, they find out it's original. If they can't find a source that says for them exactly what they want to say—better yet, five sources—they think they'll get in trouble.

Unfortunately, even the best writing handbooks tend to reinforce this notion because they focus almost exclusively on the mechanics of writing from sources—on finding information, taking notes, paraphrasing and documenting them—and tend to describe a linear process that starts with choosing a topic, proceeds to gathering information, and ends with reading and writing, as if these processes are separate and consecutive. In reality, students doing researched writing typically spend a huge percentage of their time mapping out the research area before they can focus their research question. This is perfectly legitimate, though they often feel they're spinning wheels. They have to do a good bit of reading before they really know what they're looking for. And we've all read papers of students that saved writing for the bitter end—when it's too late to deal with the gaping holes in their argument. The successful student researcher reads and writes throughout the process.

I don't mean to suggest all of your research assignments are framed as “traditional” research papers—a genre that Richard Larson famously labeled a “non-form of writing.” Though this genre persists in composition courses throughout the country, and is often the high school student's only exposure to formal researched writing, there many counter-examples of assignments that give students opportunities to do authentic research appropriate to their level of experience and knowledge. There are some creative alternatives in the packet that was put together for this event today. In addition to those, I thought I'd describe some that faculty on our campus have developed as well.

Making skeptics

For example, Colleen Keen, who teaches geography at Gustavus, wanted students in a freshman-level course on Africa to learn how to be critical about the “facts” one encounters in a variety of sources. She gives them a statement that uses a quotation from an Internet source, one retrievable by searching the phrase using the Google search engine. She asks them to locate the source and verify the facts given in the quote. They have to find the original source, read it critically, and find one or more additional sources that either confirm the “facts”—or not. In some cases they can be confirmed—but they've been taken out of context. In some they're simply wrong. And in others, the facts are more ambiguous than at first glance. Later in the course, after having developed their skepticism, they use it in a larger project—she gives them a film set in Africa and asks them to do a geographic critique. What did the filmmaker get wrong? What do the liberties they've taken with reality do to our perceptions and tell us about our cultural assumptions? I'll never watch *African Queen* the same way again.

I've used a different exercise to make students read more critically by giving small groups primary sources about a historical event—in this case, the small amount of first-hand and hearsay information available about a conversation held in 1941 between Niels Bohr and Werner Heisenberg, which happens to have been the basis of Michael Frayn's play *Copenhagen*. After reading the conflicting evidence, students are asked to propose what they think happened. They always conclude, while they might speculate that Heisenberg dissembled or Bohr misconstrued his motives, it's impossible to know for sure what happened. There simply isn't enough to go on, and what there is, is contradictory. Then I have them find and read secondary sources that tell what happened in that meeting. The secondary sources all treat it differently and most of them are not explicit about how the recreation is informed guesswork. It's a quick-and-dirty way to make students more aware of how secondary sources are based on evidence, but interpretive to an extent the authors don't always reveal. Again, not a lengthy assignment, not one that results in a product, but an exercise that sensitizes students to one key aspect of research.

Writing beyond academic discourse

In some cases one may want students to engage in research for purposes that are not tied to scholarly forms of expression. Richard Leitch, in our political science department, has students write letters to the editor on contemporary topics related to his course. In order to write the letter, they have to research the issue thoroughly. It's a nice way to demonstrate that research is sometimes required for forms of expression other than college papers. It also gives students practice writing concisely and clearly for an audience other than the teacher.

In a similar vein, Phil Voight in Communication Studies teaches an advanced course on political campaign communication. His assignments involve a lot of research and application of theory, but result in a portfolio of different forms of writing, none of them explicitly scholarly. Small groups are assigned a real, live candidate in a real campaign. They write stump speeches, position papers, and prepare briefings for the candidates. They also create storyboards for television commercials. They have done some really remarkable work that calls on research and communication theory and puts it to work in a real-world context.

Sequencing learning throughout the curriculum or within a course

Not that there's anything wrong with academic writing. Assignments may well be designed specifically to introduce students to the literature of the field and its discourse conventions and often, in the process, reveals to students how a field defines research. In an advanced biology class at Gustavus, Pam Kittleson has her students write a research proposal. Before they commit to a specific project, they need to become familiar with the literature surrounding their topic by doing a thorough review. Once they've done that, they frame their proposal in terms of how their research might fit into and complement what other researchers have already done. The way they fit their work into the literature of the field becomes part of their argument that the research is worth doing. Pam is able to get students to do this advance work because, in their highly sequenced major, all of the student have already practiced reading primary literature in the field, done a practice literature review that makes them handy with a biology database and with selecting and categorizing research articles, and have practiced writing up research using appropriate conventions for the field. Her research proposal assignment builds on skills already developed sequentially through the program, all of which culminate in a very authentic research experience that calls on a variety of skills and involves students in doing real biology.

Some majors are less sequenced than biology's and it's impossible to count on students all having a specific set of skills developed in a certain order. Laura Behling in our English department knows her students will have varied backgrounds. She wanted students to gain a sequenced set of skills in one semester, so for a survey of American literature she designed a series of labs. They take students through processes she wants them to master asking questions important to the course material. In particular, she has students seek out both primary and secondary sources, make choices among them, and develop some conclusions in presentations that are far from standard literary criticism. One lab focuses on collecting and seeking relationships among assigned literary texts and other primary sources from the second half of the twentieth century to illuminate American society in that time period. For this lab, groups of students must find ten primary sources that relate in some way to literary texts under discussion and then—here's the unusual bit—write three new verses of “America the Beautiful” that use the primary sources to illuminate a vision of American society. Instead of amber waves of grain and alabaster cities, they select images that reformulate the form of the song to represent another vision of the country. At the end of the course, her final essay assignment calls upon all of the work the previous labs have done, asking students to apply the skills they've practiced through the semester. While students in this course don't do a single, big research project, they practice skills that will prepare them to do more sophisticated work later.

Using research assignments to convey the process of inquiry

Linnea Wren, professor of art history, wants her students to gain a sense of how research is a communal effort, that it is a conversation and a debate among people working on the same issues. She teaches a course on pre-Columbian art that is a challenge because about half the students are seasoned art history majors and the other half have no background in the field at all. She gives them a task that sets a narrow boundary of inquiry within which each student has to make an individual and unique contribution. She asks them to pick an artifact found in a sacred well at Chichen Itza and explain where it came from and what it's doing there. This means each student has two big challenges: they must learn enough about the Mayan context to make an intelligent guess and then—this is usually the harder part—they have to come up with an original, supportable theory. She gives them a list of major sources to start with, and they build from there, bringing what they have found to class every couple of weeks for a “swap fest”—sharing sources, insights, ideas, forming in miniature the kind of community we are part of when we do research. It's fascinating to work with these students, especially at the moment when they realize it really is safe to stick their necks out with an original theory, provided they have some logical reasoning and evidence to support it. For many of them, this experience is truly liberating, perhaps the first time they've been asked to really think for themselves in an academic sense. It's very limited—they don't really choose a topic at all, just an object out of the well—but within those limits they are set free to be very creative.

That sense of excitement, of ownership is difficult to convey to students who would rather things be defined and step-by-step. First year students, in particular, are very pragmatic and tend to think they don't have time for idle pursuits such as reading for fun or following their curiosity. They want to know the shortest distance between two points, between the

assignment and the grade. Eric Eliason, in the English department, wanted first-semester students to experience research as open-ended and driven by curiosity, and that it might involve dead ends, blind alleys, and strange detours. For his course, “Stories from the Source,” co-taught with the college chaplain, he came up with an assignment that is much more focused on process than product. He asks students in a first year seminar to look for ways a Bible story—Cain and Abel, for example—has been appropriated in the arts. He asks them to look for novels, plays, poetry, films, paintings, and music that somehow reinterprets the story. This is very traumatic. The students’ first instinct is to come to the reference desk to ask where these are shelved. Their second response is blind panic. This is succeeded, curiously enough by dogged, even obsessive behavior—surely there must be an answer! They become deeply invested in the process. And finally they realize, after having been all over the library, gotten personally acquainted with each of the librarians, and learned very sophisticated ways to tease information out of the computer and off the shelves, that there may not be a play, a movie, a novel that deals with their story. But they all have found enough to do a poster presentation that is the public result of their work. Students express frustration as they work on this assignment because answers don’t come easily, but they become incredibly persistent and determined—and they all learn far more about research than most first year students given less challenging assignments. The moral of this story is give your students—even first year students—a challenge. They are ignorant, they are inexperienced, they are easily frustrated, they’d prefer a shortcut—but they can do amazing things if you set high expectations.

What it all means and how librarians might help <

I want to finish by returning to the five assumptions I started with to point out how courses might work with them and how librarians might help.

First of all, the belief that research is an important part of an undergraduate’s education. Our students won’t be able to think for themselves if they can’t query the world around them and see themselves as part of a vast conversation. Learning how to do that is central to their education. What’s your library’s role in this? That’s easy—it says right there on its Web site: to support the pursuit of academic excellence. It’s all about teaching and learning. Your colleagues in the library want to do whatever they can to make research—however you define it, however you want your students to experience it—a meaningful part of their time here and a method of approaching the world that they can take with them after they leave. And I’m sure they’d agree with me it’s not something the library does by itself. They can teach students how to find stuff, how to make choices among their options, how to use the tools of the trade, but those activities aren’t very important by themselves. It has to be a collaborative effort.

Second, research has to be viewed in disciplinary frameworks. This may mean creating assignments that position your students as biologists, or anthropologists, or historians not for the purposes of mimicry, but to illuminate how to think in that manner. Research, more than anything else, accomplishes this purpose. This often involves modeling your own habits and thought processes. One of our historians, for example, teaches a seminar on Revolutionary America and, at some point, has students bring in lists of sources they’re considering for their papers. They go through a joint “weeding” exercise, discussing what might make this article a good one, that book not so helpful, this essay useful but limited for some reason. In large part, he’s unpacking for them what he does when he looks at sources—making the markers of quality more transparent to them. I’ve also noticed that students begin to join the community of scholars as they become familiar with schools of thought, scholarly vendettas, minor snits—they eventually know many of the big guns almost on a first name basis, a sign that they feel comfortable as participants in the discipline and able to see that real people are behind the theories they study. Even though most of these students will not become professional historians, that insight is transferable. How might librarians help with this? In the case of the course on Revolutionary America, I met with the class to walk through a variety of tools that they might use for their work—America History and Life, JSTOR, ways of accessing research library catalogs and so on—in dialogue with the teacher. We gave students two different dimensions of expertise, a two-part invention which in an interesting way revealed to student the historical mode of thought even more clearly.

Our third assumption is that research is a complex and recursive process. The traditional research paper calls upon a number of skills: defining a boundary for research, finding information, summarizing and organizing sources, using appropriate conventions for using the sources and documenting them—it’s no wonder that, given this mass of complex tasks, students fall back on a linear, cookbook approach that often leaves out creativity or original thought. They’re much too busy trying to do the other tasks. One way of getting a more authentic experience is to break apart the skills and work on those you want to develop—for example, focus on being critical about sources by asking them to confirm facts in a given text. Leave the nuances of documenting sources to another assignment or even another course, preferably taught by someone else. Another approach is to give students a scaffold to use as they work on a substantial project. This might involve asking for a variety of kinds of writing before the final paper is drafted. Many of our faculty have found it useful to

have students write a research proposal early in the process. They might require an annotated bibliography or preliminary list of sources at some point. These checkpoints have two functions: they make procrastination impossible and they provide a feedback loop so that students have a chance to correct misapprehensions before it's too late. A third approach is to reiterate the process. One of our faculty has students write a major paper in sections. For each, they need to gather information, process it critically, come up with original ideas—and by the time they've finished part four, they've been through it enough times they've really learned the ropes.

How might librarians help? One feedback loop and checkpoint that several of our faculty use is amazingly effective. They require students when they're well into their research to meet with a librarian and go over their list of sources. A couple of faculty take it a step further and require students to write down three questions about their research and then record the librarian's answers on a form, which we sign. This gives us a chance to have a one-on-one tutorial that has proven to be some of the best teaching moments I've ever had at the reference desk. I strongly recommend this technique. It's relatively easy to do—the student simply stops by the reference desk with their bibliography or questions—but it forces them to draw on our expertise which they are often too shy or too embarrassed to do. And it gives us a chance to tailor our teaching directly to their level of sophistication and needs.

The fourth assumption we have is that learning these skills has to be a process, that these skills must be developed over time. We're encouraging our faculty to be intentional about deciding where these skills should be in their curriculum. It would be sheer madness on our campus to propose that there should be a graduation requirement that involves research, and yet I'm convinced our faculty values it, considers it essential, includes it in their courses. What they need to do is talk to each other and braid their efforts together so that no student leaves without having these skills we all value. What might the library's role be here? One of my colleagues once said something that really struck me. We were talking, in fact, about the curriculum committee and one or another of the interminable turf wars being waged there. She said the library is the intellectual commons of the institution. It is the meeting place, the shared, open space, the common ground of the whole enterprise. It is a good place—figuratively and literally—to bring your students on a regular basis for their nourishment. It's also a good place for you all, as colleagues, to come together to discuss what it means for your students to learn how to think for themselves.

Finally, we believe that the skills students need to learn are not dependent on the format of the materials they might use. Libraries today are very confusing places, and it's easy to attribute the problems students have to the encroachment of technology. In fact, I would argue, technology is only making problems they have always had a little more apparent. They cite bad Web pages now where before they cited outdated or irrelevant books or articles. I'm convinced we need to look more deeply at why students make the mistakes they make—there really is a logic behind those errors—and work to give them a set of skills that will continue to be useful as time goes on. Reading critically, reasoning analytically, communicating persuasively—these are all things students can do with or without the aid of computers. We mustn't let the clutter of change obscure those activities as the real objects of our teaching.

The state we are has been called a frontier—as if we're moving from print to electronic worlds, from the book to the Internet, from a nostalgic, dusty past to a new and shiny future. In fact, we're residents of a rich and diverse border culture, one in which information will come in a variety of formats, one in which our students must be equally at home with paper and digital environments. It would be a mistake to focus too much on technology—after all, it will change next week. And I have found that students who are good at research are often fairly clumsy using specific tools—they may not know the difference between a keyword search and a subject search, or may be all thumbs when it comes to a specialized database. But they understand the process and they see themselves as active participants in the production of knowledge, and that is what makes them successful at research. If we think it matters, we can build these skills in our students through practice, through persistence, through making more transparent the basic things we do. What better way to make our students ready to think for themselves?

Readings Related to Designing Research Experiences for Undergraduates

Places to start

Bean, John C. *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. San Francisco: Jossey-Bass, Inc., 1996. Highly recommended by Willamette University's writing program

director, who calls it “the Dr. Spock of Writing-Across-the-Curriculum guides.”

Lutzker, Marilyn. *Research Projects for College Students: What to Write Across the Curriculum*. Westport, CT: Greenwood, 1988. A practical guide to creating assignments, with particular attention to using primary sources creatively.

Discussions of students’ research processes and problems

Fister, Barbara. "The Research Processes of Undergraduate Students." *Journal of Academic Librarianship* 18.3 (July 1992): 163-169. Describes a small-scale study of strategies successful students used in their research. Concludes that successful students employ a variety of strategies to find a focus, use a process that integrates reading, writing and research recursively, and attend to rhetorical issues as they do their work.

Klein, Michael. "What is it We do when We Write Like This--And How can We Get Students to Join Us?" *Writing Instructor* (Spring/Summer 1987): 151-161.

Describes research processes employed by scholars and constructs an interesting “hunting and gathering” duality for research strategies; opens with a hilarious dystopian vision of students working in “the night library.”

Larson, Richard. "The 'Research Paper' in the Writing Course: A Non-Form of Writing." *College English* 44.8(December 1982): 811-816. A spirited attack on the “research paper” as a genre in the English composition classroom—and a strong endorsement of authentic, discipline-based research experiences for undergraduates.

Schwegler, Robert A. and Linda K. Shamon. "The Aims and Process of the Research Paper." *College English* 44.8 (December 1982): 817-824. A companion piece to Larson (above) that lays out four different approaches: review of research, application of a theory, response to prior research, or testing of a hypothesis. Points out that students and their teachers view the purpose of research differently: “Students view the research paper as close-ended, informative, skills-oriented exercise written for an expert audience by novices pretending to be experts.”

Nelson, Jennie. "The Research Paper: A ‘Rhetoric of Doing’ or a ‘Rhetoric of the Finished Word’?" *Composition Studies: Freshman English News* 22.2 (Fall 1994): 65-75. Surveyed over two hundred first year student researchers and found most used a “compiled information” approach, gathering material and writing about it without formulating a focus. Only five percent of students used a complex, recursive strategy.

Valentine, Barbara. “Undergraduate Research Behavior: Using Focus Groups to Generate Theory.” *Journal of Academic Librarianship* 19.5 (1993): 300-304. A depressing but not surprising student-centered view, in which research strategies focus on avoiding effort and gaining a grade; useful as a reality check.

Descriptions of specific assignments

Aspaas, Helen R. "Integrating World-Views and the News Media into a Regional Geography Course." *Journal of Geography in Higher Education* 22.2 (July 1998): 211-27. Describes how she teaches students to gain insight in African world-views by analyzing what African media say. Provides a series of assignments, beginning with two in-class sessions and progressing to more independent research projects and a paper.

Capossela, Toni-Lee. "Students as Sociolinguists: Getting Real Research from Freshman Writers." *College Composition and Communication* 42 (1991): 75-79. Engaging students in applied field research with a more or less simulated library component (i.e., assigned text to all students). Very adaptable to real library research, however.

Coon, Anne. C. "Using Ethical Questions to Develop Autonomy in Student Researchers." *College Composition and Communication* 40 (1989): 85-89. Series of assignments for a first-year class beginning with library research and progressing to primary research in a way that builds in recursivity.

Gredel-Manuele, Zdenka. "The Study of Family History: Research Projects in a Senior Seminar." *Teaching History*. 16.1 (Spring 1991): 27-32. Detailed description of a semester-long project in collecting, analyzing and evaluating primary

documents in family history and relating them to library research on ethnic groups' immigration history, etc.

Krest, Margie and Daria O. Carle. "Teaching Scientific Writing: A Model for Integrating Research, Writing and Critical Thinking." *The American Biology Teacher* 61.3 (March 1999): 223-227. Detailed, even charted, description of assignments for a freshman course, Introduction to Scientific Writing. Moves students through a series of assignments from abstracts and sections of lab reports, to reviews and proposals, research articles—all keyed to goals for writing, research, and critical thinking skills.

Web sites

Suggestions for Assignments: project ideas, with concepts and skills they develop
<http://www.gac.edu/Library/IMLS/assignmentsuggestions.html>

Share your Ideas: a list of pedagogy journals with links to instructions for authors
<http://www.gac.edu/Library/IMLS/share.html>

Compiled by Barbara Fister (fister@gustavus.edu) with recommendations from Gretchen Moon, Writing Program Director, Willamette University.

Last updated November 19, 2001