HACKING KNOWLEDGE

INFORMATION LITERACY AS CREATIVE PARTICIPATION
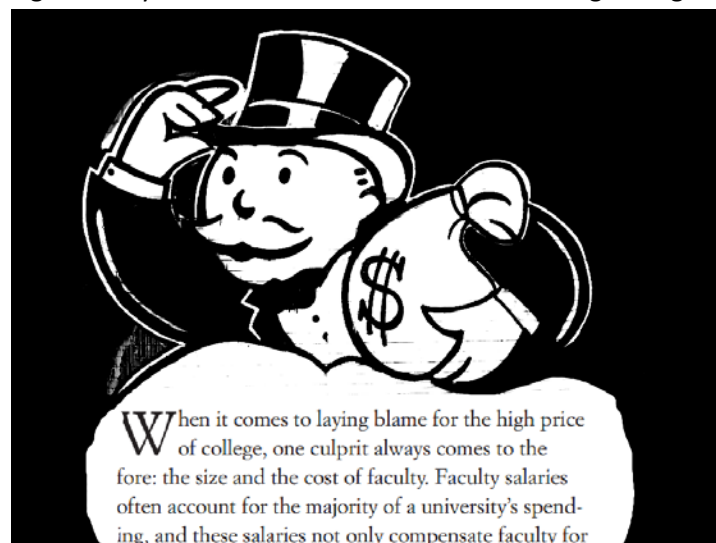
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Abstract: What is information literacy for? Is it to help students succeed in college? To learn how to enter the conversations that scholars engage in? To enable students to create new knowledge? To give students tools to change the world? Though we may say "all of the above," our approaches to teaching and learning often focus on immediate needs ("how can I find five scholarly sources for my paper?") at the expense of deeper, more complex kinds of learning. We will unpack the unintended messages we often send when modeling the research process, examine the ways library systems position researchers as consumers rather than creators, and explore ways to invite students to hack the library and claim it as an intellectual maker space. If information literacy is preparation for lifelong learning, we need to consider the changing world we are sending our students into - and what we librarians can do to change it for the better. Presented at the Michigan Library Association Academic Library Conference, May 2013.

I thought I'd start us off thinking about how we experience information using three issues that we all know something about firsthand. First, the cost of college is an extremely fraught issue that touches a lot of lives but isn't widely understood. Here's the opening paragraph of a widely-reported study on what's wrong with college: faculty salaries cost a lot and aren't teaching enough courses.

When it comes to laying blame for the high price of college, one culprit always comes to the fore: the size and the cost of faculty. Faculty salaries often account for the majority of a university's spending, and these salaries not only compensate faculty for

Second, a claim from an influential study from the National Endowment for the Arts issued in 2007. Reading is at risk, especially among young people, and this decline is a national crisis that deserves attention. Third, Jeffrey Beall, a librarian who recently made page A1 of the *New York Times* is pleased to announce that we can all relax, now, because the serials crisis is over. Maybe being in the *Times* went to his head.

The general decline in reading is not merely a cultural issue, though it has enormous consequences for literature and the other arts. It is a serious national problem. If, at the current pace, America continues to lose the habit of regular reading, the nation will suffer substantial economic, social, and civic setbacks.

All three of these pieces were written by recognized experts and have cited sources. On the surface they are reasoned and scholarly. When picked up by the media, they take on the appearance of being fact, and as those reports circulate, that repetition enhances their authority. In time, they begin to have a certain inevitability, a ring of truth. Let's take a closer look.

There are a lot of reasons that a college education has gotten more expensive. According to the Center on Budget and Policy Priorities (which is not-partisan but, full disclosure, thinks poverty is a bad thing) the rise in tuition is an almost perfect mirror of the fall in public support for higher education. Arizona decreased public spending on higher education by 50.4 percent and increased tuition at public four-year institutions by 78.4 percent between 2008 and 2013. Michigan decreased public support for education by 32.4 percent and raised tuition at public four-year colleges by 19.5%. There are other figures that challenge the claim that spending on faculty is the primary cause of rising costs. Instructional salaries for continuing full-time instructional staff at Southeastern Conference Division I schools increased 15.5 percent between 2006 and 2011; during that same period athletic coaches' salaries increase 129 percent. The percent of faculty who are contingent has risen to 76 percent. The mean pay per course is $2,700. As it happens, the study I opened with, attributing rising college costs to faculty salaries, commissioned by the conservative American Council of Trustees and Alumni, has been retracted because its author discovered . . . well, mistakes were made and a month after the press release made the rounds it quietly disappeared.

What about the decline in reading? It really depends on how you handle the numbers. The NEA did a bit of cherry-picking when they did their study. School-related reading didn't count, which put people in school at a bit of a disadvantage. Literary reading was defined as fiction, plays, and poetry. Dan Brown's fiction counted as literature, but the works of John McPhee didn't. One critic pointed out that there was a decline, measured against a high point, but it flattened if you used a longer time series. The reality is that the numbers of books published has boomed, the number of things checked out of public libraries per capita is higher than ever since we started counting, and a number of recent surveys, including one by Pew suggest that the death of reading was greatly exaggerated. According to this study, more than 80 percent of Americans between 18 and 29 years old read a book within the past year and they report they are reading more than they used to. Notice that the age group least likely to read books: those over 65. This paints quite a different picture than the dire one the NEA predicted. One

other odd tidbit: the 2004 NEA survey, *Reading at Risk*, found more people were writing creatively than in the past. Unlike reading, writing was something people of all races and classes participated in equally. Young people were the age group most likely to write creatively, but for some reason that wasn't considered something to celebrate. Valuable participation in the arts, this report implies, is defined by consuming literature, not creating it. Yet how often do we hear someone say with complete certainty, "kids don't read anymore"? These reports have often been cited as proof.

Of course this sense of impending doom isn't new. Johnny couldn't write back in 1975. Literature and literacy have always been sites of class struggle –both in terms of social class (how do we decide what kind of cultural activity has value?) and who controls what happens in the classroom.

As for the serials crisis being over, I probably don't have to tell you that this statement is bizarrely off base – but I will, anyway. Mike Taylor, a British scientist who is an expert on sauropods and an open access advocate, wrote a post pointing out how ludicrous this "mission accomplished" statement is on many counts, including willfully misrepresenting a source. Beall quoted as evidence that the big deal had resolved the serials crisis a sentence from a paper by mathematician Andrew Odlyzko who wrote: "Publishers, through the oft-reviled 'Big Deal' packages, are providing much greater and more egalitarian access to the journal literature, an approximation to true Open Access." Sounds good, right? Proof that the Big Deal works? What Beall omitted was the rest of the paragraph, which changes the meaning completely:
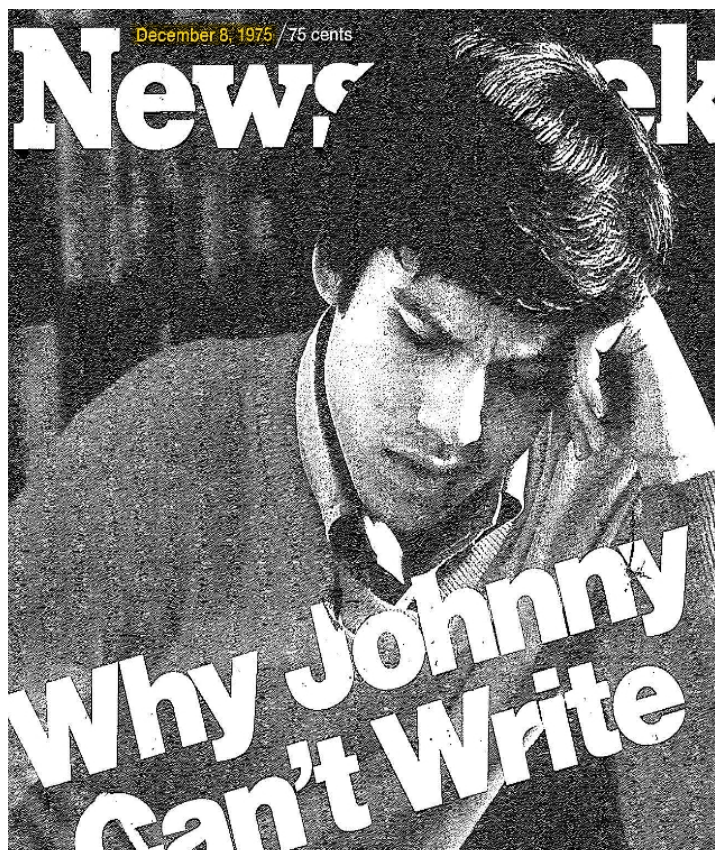
> In the process [publishers] are also marginalizing libraries, and obtaining a greater share of the resources going into scholarly communication**.** This is enabling a continuation of publisher profits as well as of what for decades has been called "unsustainable journal price escalation**".** It is also inhibiting the spread of Open Access, and potentially leading to an oligopoly of publishers controlling distribution through large-scale licensing.

The reason this mathematician argues that "Big Deals" are worth studying is because they point the way toward a not very pleasant future in which profitable corporations relying on cheap labor will wield ever more power. The way that for-profit publishers have shouldered aside a public good – the library – is not a triumph but rather a troubling precursor of things to come. Of course, I hope he's wrong about that, but he's certainly not in favor of Big Deals.

Though Odlyzko doesn't mention it, this expansion of one kind of publishing has shrunk another kind. As Walt Crawford shows in his new monograph, *The Big Deal and the Damage Done*, the rising cost of serials had significantly diminished access to information for those fields of inquiry that rely significantly on books.

So there we have three examples of the slippery ways that "truth" eludes simple formulas. Learning how to examine information critically and in context is an important part of the learning libraries support. We need to help students learn
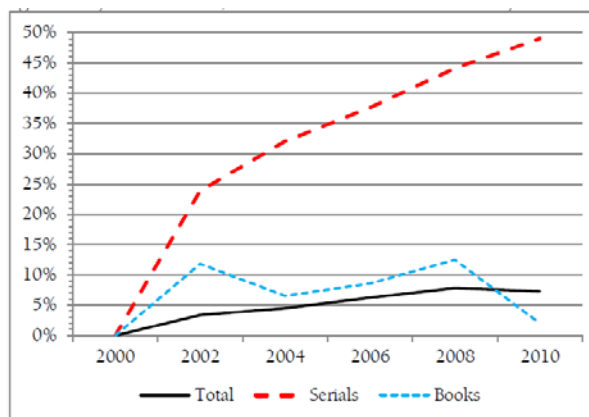

Figure 1.7 Changes in spending 2000-2010 for 2,636 libraries

that we are more than mere consumers of information, that information is part of a complex social and economic web of activity, and that we all are critical participants in shaping our understanding of the world. We need to help students learn not just how to find information, but where it comes from and who decides what counts and how we can each play a role in making new knowledge.

This isn't just a set of skills that students use for school. Two trials concluded late last week. A woman in Arizona was found guilty of killing a man. A man in Guatemala was found guilty of killing 200,000 people. Only one of these trials got significant news media attention even though the Rios Montt trial was live-streamed, available to anyone who wanted to listen in. Is it that US journalists couldn't be bothered? That audiences in this country are shallow and insist on dramatic but simple good-and-evil stories? Is it that our general knowledge of history and geography is so lacking that we can't grasp the context of a genocide in a nearby country that our government supported with arms and training? Do we really not care?

This is the world our students are entering. It's a complicated, confusing place in which the institutions we used to turn to for information are all in flux. We need to help them make sense of it, engage with it, and be prepared to create and share their own evolving understanding of this world of ours. We have just a little time to help them learn how information works, just a little time to nudge them through that threshold, that place where they go from thinking of knowledge as something that happens outside, over there, to recognizing in themselves the power to make up their own minds and to change other people's. How we teach, then, becomes really important.

Libraries are complicated places, and we try to apologize for their clunkiness by oversimplifying things that are by their very nature complex while letting simple things get too convoluted. We try to make our databases as simple as Google, even though we know from Project Information Literacy and other studies that finding sources isn't something students feel is particularly difficult. Citing sources, on the other hand, is a Byzantine set of rules that takes up an inordinate amount of everyone's time. Deciding how to frame a question and making good choices among the results of a search, reading enough quickly enough to refine the question and returning to search again – that recursive process of discovery is much harder. When we try to make research a kind of frictionless online shopping experience – click the "scholarly" button, select the goods you need, put them in your cart, and check out – we have good intentions, but we're encouraging what Paulo Freire many years ago called "the banking concept of education." Knowledge is a commodity controlled by other, more powerful people.

The students' role is to passively have that knowledge deposited from the experts into their heads. They have no effect on that knowledge and they have nothing at all to contribute.

Enter the traditional research paper. You know the one, the paper that students think is a test for how well they can gather up other people's ideas, mash together a collection of quotes and add a moral at the end – oh, and don't forget to append a detailed ingredients list. This is actually closely related to the banking concept of education. Students go to the library to acquire the bits of authority they need, arrange them according to fairly incomprehensible rules, then deposit the mash-up into their teacher's briefcase.

This practice has been criticized for decades. Perhaps the most-cited jeremiad against the cut-and-paste artificiality of the genre is Richard Larson's 1982 article that called it a "non-form of writing," a genre that had little to do with research, in which creativity, problem-solving, and original thought were discouraged. In 1994, Jennie Nelson studied the research practices of 238 students and found that a vast majority (75 percent) used a "compile information" approach. Ten percent developed a thesis and stuck to it, regardless of what the sources they found told them. (We meet these students from time to time at the reference desk, the ones who tell us "I finished my paper. All I need now is to find five scholarly sources to quote." Another ten percent would find some sources on a topic, then prowl through them in search of a thesis. Only five percent did what their instructors and writing handbooks advise: explore a topic, propose a tentative thesis, do more research, and only then draw conclusions. Now, this is all very familiar, but it should be troubling. When we train novice researchers how to write in an academic mode, we are actually inviting them to cherry-pick evidence, draw conclusions hastily, and basically use sources unethically, though hand-coding references with meticulous attention to commas and colons is a major part of the process.

Things haven't changed much since Nelson's study. The findings of The Citation Project are strikingly similar. This project, in which researchers collected and analyzed first year papers from institutions across the country, discovered that students didn't write about sources. They found and copied quotations (or rearranged the words slightly in an attempt to paraphrase without actually having to understand the meaning of the phrase). Most quotes were drawn from the first or second page of the source, and sources were typically referred to only once. Few papers in the study demonstrated any understanding of the source. Finding a good quote apparently was the purpose of consulting sources. Of course the interface they really yearn for is this imaginary one Matthew Reitsma created, the one that would give them that mythical "perfect source" that would provide exactly the answer they are seeking.
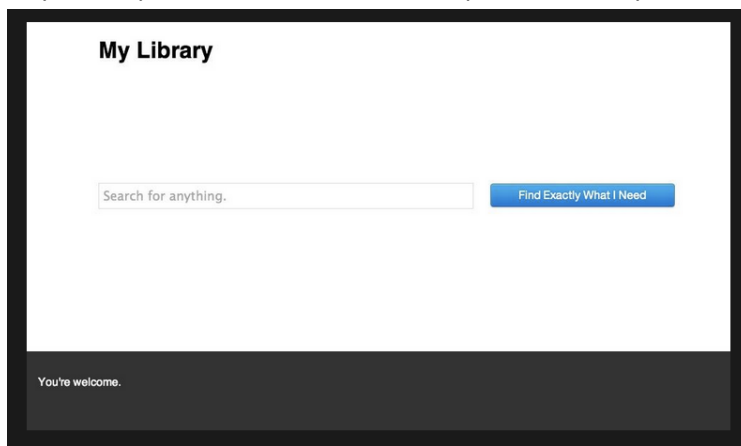
The reasons we assign these papers is to prepare students for academic work. Instead, they prepare students for academic fraud. Be original, but be sure to find a source to back up everything you say. Use scholarly sources. You can tell a source is scholarly by how it looks. Your margins should be exactly one inch. When we tell students to back up what they say with evidence, we don't really mean "look for quotes that agree with your perspective." We mean "finding out what other people have said about the issues you're examining will help you make up your mind. Let evidence guide your conclusions." Likewise, when we say "use scholarly sources," we mean "there's value in the way that scholars study ideas. They have ethical standards about how to approach a question with an open mind using rigorous and fair methods, and their findings are tested by peers. These sources are the record of a thoughtful conversation that contributes to what we know about the world, and with this assignment, we're inviting you to be part of this conversation." But we may as well be parachuting them into enemy territory, asking them to mimic the guttural sounds and hand-gestures of an unfamiliar tribe or, just as unhelpful, sending them to bluff their way through presenting a paper at a scholarly conference, hoping nobody will notice they have no idea what they're talking about – though we did at least explain to them in some detail what to wear.

I would argue that before students practice writing prose that quotes scholarly sources in a formal manner, that we work on those more fundamental, though admittedly more difficult, concepts: that what we believe is shaped through social processes, that some methods of approaching ideas are more effective and ethical than others, that it's important to begin an inquiry with an open mind, that it is up to each of us to draw our own conclusions. That the world is a complex place, but it's worthwhile to try and understand it. That good ideas can lead to valuable actions. Before we ask students to join the conversation, we need to be sure they understand why we believe knowledge works that way and what make conversation worthwhile.

I am fond of the way a conservative philosopher, Michael Oakeshott, described it in his essay "The Voice of Poetry in the Conversation of Mankind," in which he talks about what happens when ideas come together not as an inquiry or argument but rather a conversation, one that isn't conducted for profit or discovery, or a contest where there are winners and losers, but an equal meeting of diverse voices embarked on an adventure together. He writes:

> We are the inheritors, neither of an inquiry about ourselves and the world, nor of an accumulating body of information, but of a conversation, begun in the primeval forests and extended and made more articulate in the course of centuries. It is a conversation which goes on both in public and within each of ourselves. . . . Education, properly speaking, is an initiation into the skill and partnership of this conversation in which we learn to recognize the voices, to distinguish the proper occasions of utterance, and in which we acquire the intellectual and moral habits appropriate to conversation. And it is this conversation which, in the end, gives place and character to every human activity and utterance. (196-8)

Paolo Freire, who was not a conservative thinker, would agree with this idea of education being an open invitation to co-create meaning. His alternative to the banking concept of education was one focused on solving problems, a method of learning that encouraged students to ask genuine questions and pursue their own answers. He characterized this kind of education as "the practice of freedom."

When we think of sources as inert bits of intellectual property that students can gather, sort, exchange, and document in assignment prompts that are more explicit about the penalties for theft than they are about how and why to conduct inquiry, when we organize our libraries to function as more or less convenient shopping platforms, we are missing the point. But the temptation to attach marketplace value to knowledge is all around us. Scholars are encouraged to develop themselves as brands and advance their careers by trading the legal ownership of their research output in exchange for personal gain, job security, and advancement. The library, once an intellectual commons, has been enclosed and our chief value now for faculty is as a purchasing agent and for administrators, as a book-themed student success center. Our cultural insistence on personal advancement, productivity, and efficiency has led our service-oriented profession to respond in ways that betray our core values.

Ranganathan's Laws of Library Science have been reinvented to reflect market-based assumptions.
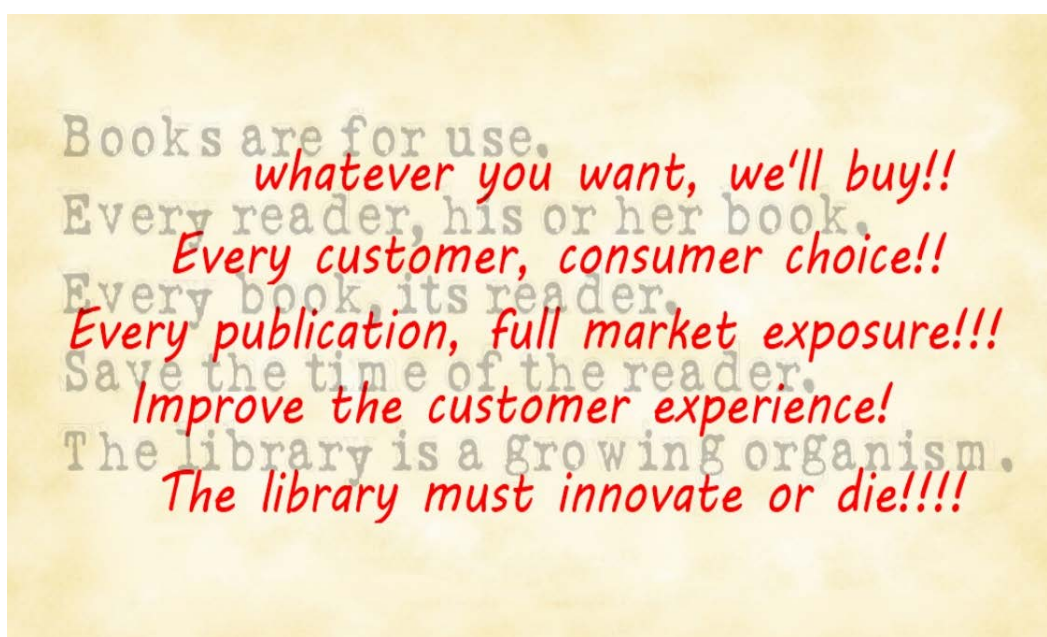
We have so thoroughly absorbed the market-driven philosophy of human behavior that we forget that having value is not the same as having *values*, that there are non-market-oriented ways that human beings have successfully interacted. Our underlying neoliberal assumptions about human motivation have profoundly influenced our thinking about what libraries are for and how they can be used. We have begun to feel it is our duty to provide information on demand and to help students complete their assignments as painlessly as possible. We've lost some of the rich social meaning of libraries when it's all about exchanging intellectual property as efficiently as possible.

The idea of threshold concepts for information literacy is a compelling one – identifying concepts that are complex, challenging, that define a realm of knowledge in some way, and which are irreversible. Once you've crossed the threshold, your understanding changes forever. I'm new to this way of thinking about what we do and I don't have a clear sense of which concepts qualify, but there is one threshold I've seen students cross, and it's a powerful moment in their education. It's when they go from being outside the knowledge factory, people who can get knowledge and manipulate it and even

build things with it according to spec – all basically consumer-oriented information behaviors – to being people who create new knowledge, who see themselves as participants in Oakeshott's eternal conversation that puts us in community with others to collaboratively make and remake meaning. This is a transformative moment for students, a significant shift in their sense of personal agency, and I want it to be an experience every single one of them has. It's empowering, it's enlightening. It's the practice of freedom.

The library itself and our professional values are a potent force for enabling that practice. We have critical choices to make in order to preserve the common ground where these conversations take place and are nurtured, shared, and preserved.

We hear, often enough, that there is something inherently tragic about commons. Like libraries – and reading, and affordable college degrees – they are almost by definition doomed, except when we look around and see that they are actually thriving. Garrett Hardin declared the commons tragic in a 1968 essay in *Science,* in which he argued that people's motivations are inherently selfish, that the lower classes will "overbreed for their own aggrandizement." He believed that overpopulation was a critical threat, and that access to birth control would not help curtail population growth in the third world – or as he put it, "freedom to breed will bring ruin to us all". To make his point, he showed how grazing lands and fisheries collapsed when individual interests collided with the need to promote sustainability. He argued that this was evidence that people are unable to share wisely, so their behavior must be regulated either by a strong state or by the invisible hand of private interests. We've seen how well that turns out.

Nobel prize winning economist Eleanor Ostrom disagreed. She studied successful commons and found that actually they can work, even when the resources being called upon might be exhausted if mismanaged. But even with Eleanor Ostrom on the side of the commons, we still talk about information and culture using metaphors of artificial scarcity and depletion, which unlike fish or pastureland are not exhausted through sharing. The inexhaustible nature of ideas is something Thomas Jefferson grasped long ago when he argued against the state granting generous monopolies over inventions.

> If nature has made any one thing less susceptible than all others of exclusive
> property, it is the action of the thinking power called an idea . . . He who
> receives an idea from me, receives instruction himself without lessening mine;
> as he who lights his taper at mine, receives light without darkening me. That
> ideas should freely spread from one to another over the globe, for the moral
> and mutual Instruction of man, and improvement of his condition, seems to
> have been peculiarly and benevolently designed by nature . . . like the air in
> which we breathe, move, and have our physical being, incapable of confinement
> or exclusive appropriation.

The tragedy of the commons isn't that people are inherently selfish, it's that we think commons are impossible, unaffordable, inevitably subject to ruin through greed and selfishness, and in that spirit our intellectual commons have been enclosed, made into private property, made artificially scarce. But this is not a free market at work. The way we currently manage the record of knowledge is not like a well-managed and efficient estate enclosing the remains of a tragic commons; it's more like a giant agribusiness. We prop the information industries up with price supports, even though we know what

we're doing is unhealthy and unsustainable. Those new APA citation rules did something that symbolizes the enclosure of knowledge. In the past, we supplied information that could be used to track a source down in a library. We now must point readers to publisher-supplied DOIs or URLs to publishers' websites as the source of a text, even if it means that your "retrieved from" statement is a lie. They have positioned publishers (like themselves) as the curators and source of knowledge. Libraries are merely local franchises. This is a shift in metaphorical identity that we should resist.

Bethany Nowviske wrote [a wonderful piece about digital humanities](#) in an era when the whim of a few top administrators can nearly bring down a public university, as we saw not too long ago at the University of Virginia, where she works.

> We make things because that's how we understand. We make things because that's how we pass them on, and because everything we have was passed on to us as a made object. We make things in digital humanities because that's how we interpret and conserve our inheritance. Because that's how we can make it all anew.

This is what libraries are about – participating in a common purpose, engaging in [what philosopher Michael Polanyi described](#) as "public liberties" – the pursuit of knowledge for the common good. Values, like ideas, are not depleted by sharing. We don't have to worry that we're in competition for market share with Google when what we're promoting is our ever-so-shareable values.

So what might this look like in practice?

- We can help students stop thinking in terms of producing papers to exchange for a grade and instead help them become passionate about ideas, ideas they want to share. We can work with faculty to help students frame inquiry as conversation, as an invitation to authentic learning that is so much more inviting than "ten double-spaced pages using five scholarly sources." We have power because we see students at work, and we can help faculty learn from our observations. Not only would they love to have better papers to grade, they really want students to benefit from their assignments.
- For our faculty and their own scholarship, we can help them shift the conversation from being productive individuals whose work is measured in publications to being active citizens in a republic of knowledge. They want their work to matter, not just to count toward their productivity quotas. We can help them change the system. At the very least, we can ban from our vocabularies, "I hope you have a productive summer."
- For librarians, we can change our public identity from being a purchasing agent and a middleman delivering commodities from the vast corporate farms of knowledge, the places that really create and preserve the stuff, to being a master gardener cultivating our local gardens, with an eye on the health of our global knowledge ecosystem.
- For the library itself, we can stop thinking about it as a retail outlet and shopping platform and instead think about how it can foster a community based on making and sharing, a local node in the global knowledge commons.

While it may seem impossible to reinscribe our institutions with values that don't fit the dominant cultural narrative of our time, we are in a good position to remind our communities what we

are for and to recall how our intellectual commons can work – and that this, in fact, is what higher education is truly about.

Many years ago David Bartholomae described the complexity of the writing tasks we set for students by saying we ask them to "invent the university." We expect them to assume a privilege they don't have, to speak in someone else's voice. Learning at this stage, he says "becomes more a matter of imitation or parody than a matter of invention and discovery" (408). Students can't join the conversation until they learn to sound just like us. I want to help our students do more than invent the university. I want them to hack it, to hack the library, to hack every idea that makes them curious.

In a forthcoming crowd-sourced anthology, *Hacking the Academy,* Tad Suiter offers a definition:
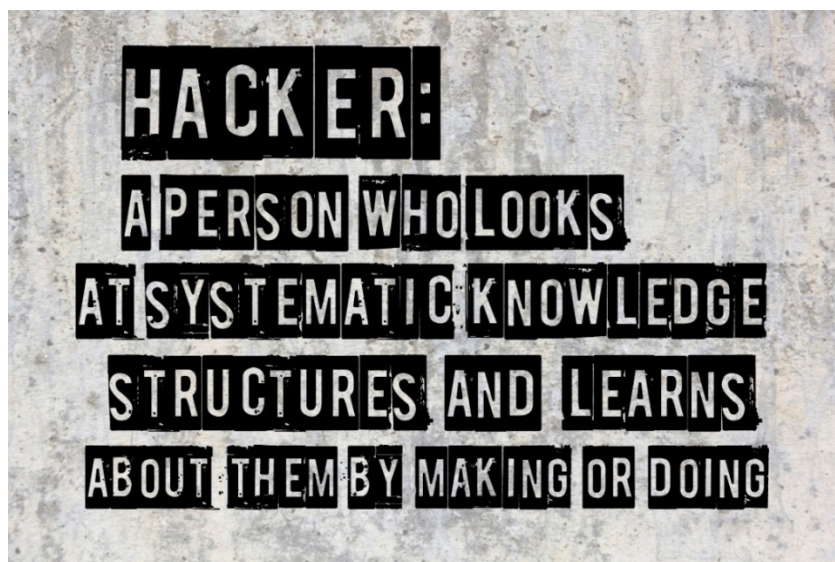
To me, that sounds like an excellent definition of critical information literacy. It sounds like a plan.

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