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Developmentalism: Learning as the Basis for Evaluating Information

Mark Lenker

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Abstract: The developmentalist conception of information's value makes learning the central consideration for evaluating information. Following philosopher Richard Kraut, this article argues that developmentalism provides an important complement to prevalent methods of teaching the evaluation of information. These methods emphasize (a) trustworthiness—for example, CRAAP (currency, relevance, authority, accuracy, and purpose) and CARS (credibility, accuracy, reasonableness, and support) and (b) the use of information in an argument—for example, Joseph Bizup's BEAM (background, exhibit, argument, method). The neglected link between evaluation and learning is crucial for early college researchers; otherwise, students can easily just find sources to “back up” their existing opinions. Learning-centered evaluation also challenges students to question how selective exposure influences their media habits. The article includes suggested applications for information literacy instruction in first-year composition.

Introduction

Developmentalism as presented here advocates for a new way of thinking about the evaluation of information. This new approach is based on the developmentalist conception of value described by philosopher Richard Kraut in his book *What Is Good and Why*.¹ Applied to judgments of information's value, developmentalism makes *learning* the central consideration for making such evaluations. In other words, information source A is more valuable than information source B because A gives me a better opportunity to learn something that significantly develops my

perspective on the question at hand. Other prevalent approaches to evaluating information frequently taught in higher education include (a) looking for criteria that indicate a source's trustworthiness and (b) considering the ways that a source might be useful in an argument. Neither approach has much to say about how information contributes to a researcher's learning. In this regard, the developmentalist perspective serves as an important complement to teaching students trust-based and use-based methods of evaluating information. Emphasizing learning is especially important in the contemporary information environment, given the ease with which one can miss opportunities for learning by relying on information sources that merely confirm one's existing views. Using learning as a standard for evaluation requires both a discerning eye for the information itself and a sophisticated awareness of the information's impact on one's thoughts and feelings. Following Elliot Eisner, this article frames such bidirectional sensibility in terms of what he calls "connoisseurship."²

The pages that follow will sketch the theoretical basis for a developmentalist approach to evaluating information. They will also make general suggestions for how the developmentalist perspective can be used to refine information literacy instruction for first-year English classes (it remains up to individual practitioners to develop specific lesson plans for their institutions). But first, let us look at the ways that trust-based and use-based methods give an incomplete picture of information's value.

Limitations of Trust-Based Methods

Classic examples of trust-based evaluation methods include the CRAAP (currency, relevance, authority, accuracy, and purpose) Test and the CARS (credibility, accuracy, reasonableness, and support) checklist.³ The underlying goal for these instruments is to acquaint users with criteria that will help them distinguish trustworthy information from information that warrants suspicion.

Given current concerns about media bias, “alternative facts,” and fake news, librarians may find that they get more requests from faculty to teach the evaluation of information in this vein.

Finding trustworthy information is a crucial skill, but the prominent methods for teaching trust-based evaluation have come under criticism, especially insofar as they involve exhaustive checklists of criteria for determining information’s value. Checklists have been criticized for encouraging a mechanical application of the criteria to determine whether a source is “good” or “bad”; they can also involve an unrealistic number of criteria for students (or anyone) to consider.⁴ A further challenge associated with criteria-based approaches to evaluating information is that they assume students will analyze the source to an extent that many people do not make time for, especially when working with information online. A provocative study by Miriam Metzger, Andrew Flanagin, and Ryan Medders suggests that, rather than conduct a time-consuming analysis of an online source’s content and provenance, users frequently employ conceptual shortcuts, or heuristics, to assess a source’s credibility. The heuristics most frequently discussed in focus group interviews include considering a source’s reputation, considering endorsements of a source, looking for consistency with other sources (corroboration), distrust of sources that fail to meet the user’s expectations for professionalism, and wariness of sources that ask users to purchase a product or provide contact information.⁵ While introducing students to such concepts as authority and currency may add some sophistication to such heuristics-based habits of evaluating information, it is unreasonable to expect students to conduct a formal analysis for each source they consult. Ideally, the evaluation techniques we teach would fit more naturally with the ways that people tend to interact with information.⁶

A further criticism of the checklist- and trust-based approaches is that they are compatible with surface or strategic learning, for which the chief motivation is adequate (or even excellent)

performance on an externally imposed academic challenge. This is opposed to *deep* learning, which is motivated by a desire to enrich one's perspective on a question, either for the sake of applying the new knowledge to one's life or just because one finds the subject matter interesting.⁷ Satisfying the criteria in the CRAAP Test gives no guarantee that the information at hand will contribute to one's learning in a significant way. Perhaps a student has planned his or her argument prior to doing any research and now just needs some credible sources to back up the most important points. Or maybe a student has ideological commitments that lead him or her to look only for authoritative sources that support his or her existing opinion. In neither case does the CRAAP Test teach the student anything about the value of information for achieving a more sophisticated perspective on a research question.

Marc Meola is on target when he points out that credibility checklists operate on an "internal model." They emphasize criteria internal to the information source itself.⁸ The credibility approach comes up short in prompting students to consider contextual factors that give information the lion's share of its value. What is the question or occasion that makes this information noteworthy? How does this information differ from other sources I have consulted? Why is this information published in this particular medium? Who might argue for a different point of view? Most significantly, how does this information make a difference for my learning?

Limitations of Use-Based Methods

Use-based approaches to teaching evaluation also fall short with respect to encouraging meaningful learning. An instance of use-based teaching that has shown increasing popularity in the library community stems from the work of composition scholar Joseph Bizup. Bizup offers students a helpful framework for thinking about the ways that information sources can be used in an argument. According to his BEAM classification system, information can be used to provide

background for the audience to understand the subject matter, an *exhibit* (such as data or a quotation from a primary source) for the author to interpret in order to make a point, a reference to another expert's *argument* through which the author can develop or contextualize his or her own opinion, or a *method* that the author uses as a theoretical lens for interpreting evidence or arriving at conclusions. Students can use the BEAM categories to analyze ways that outside information is used in a given text; they can also apply the framework to their own writing as a guide to help them integrate information into their own arguments.⁹

In contrast to credibility-based approaches to evaluating information, this rhetorical approach has the advantage of calling on students to consider the context in which they plan to use information. For example, students using BEAM will evaluate sources based on their ability to help their audience understand their argument. Students will also consider the ways that different types of sources can address different gaps in an argument's persuasiveness.

But ultimately, this rhetorical approach represents an incomplete understanding of information's value—that is, it does not call on students to consider whether a source contributes to their learning. It is not hard to imagine a clever student starting a research project by outlining his or her argument and its conclusion, finding sources to substantiate the main points, then weaving the sources and structure together to present a well-formed argument. This student has demonstrated a grasp of the ways that information can be persuasive, but it remains an open question whether he or she understands and appreciates the ways that information enriches understanding and spurs further inquiry.

To clarify, it would be too much to say that the trust-based and use-based approaches to teaching evaluation skills actually encourage a close-minded, conclusion-driven manner of conducting research. The problem is that these methods of teaching are compatible with such

limited conceptions of research, even though such conceptions are antithetical to the spirit of free and broad-ranging inquiry that the library and the university seek to cultivate. This is precisely where the developmentalist notion of information's value can supplement our existing methods of teaching.

Developmentalism: Good Information Contributes to Flourishing

What does it mean for information to be good? One way to approach this question is to situate it within a more general theory of what it means for anything to be good. Philosopher Richard Kraut provides such an account in his book *What Is Good and Why*. According to Kraut, an item, activity, or event is good insofar as it contributes to a living thing's well-being or flourishing. As Kraut puts it, "For most things, to *flourish* simply means to be healthy: to be an organism that is unimpeded in its growth and normal functioning."¹⁰ For humans, flourishing involves growth and development within specifiable domains: "A flourishing human being is one who possesses, develops, and enjoys the exercise of cognitive, affective, sensory, and social powers (no less than physical powers). Those, in the broadest outline and roughly speaking, are the categories of [human] well-being."¹¹

There are many ways to think about what constitutes well-being. Kraut maintains that his account of well-being is particularly compelling because it derives from uncontroversial, commonsense notions of a healthy human life cycle. Although there can be much debate on the question of what is good for a specific individual in a particular situation, we can generally agree that it is good for children's sensory, affective, cognitive, social, and physical capacities to grow more developed and refined as they get older. It is also uncontroversial that when sickness, old age, or abuse cause our capacities to decline, we cannot be said to be flourishing as we once did, and that is bad. While Kraut's developmentalist theory will not give us unequivocal answers on

what is best in a particular situation, it does provide some starting points for reflecting on the relative merits of competing courses of action.¹² The theory's emphasis on growth and development makes it a particularly suitable basis for reflecting on what makes educational undertakings more or less worthwhile.

In contrast to trust-based and use-based approaches to evaluating information, the developmentalist account provides resources for explaining why a student who merely goes through the motions of research represents a disappointment. Even though the student may be competent enough to find sources that meet criteria for trustworthiness and use them to construct a reasoned argument, the value of information for the student is limited in important ways, especially in light of the educational context in which the student is working. Our methods of teaching students to evaluate information should emphasize the potential for information to stimulate development.

In Kraut's account of the cognitive aspects of human flourishing, he makes an observation that bears considering here. Rather than associate cognitive flourishing with the mere possession of knowledge, Kraut argues that the stimulating pursuit and acquisition of new knowledge exemplifies cognitive flourishing.¹³ For our purposes, if a student's point of view on the subject matter remains static throughout the course of a research project, that student will miss out on important opportunities to develop, grow, and enjoy learning in distinctly human ways.

Disruptive Information Stimulates Development

For an information source to make a meaningful difference intellectually (or affectively, or socially), it needs to have a disruptive quality that pulls students out of their current trajectories of thinking and feeling. It has to make them consider new possibilities. This disruptive quality is not internal to the source alone; rather, it describes the interaction that the learner has with the source.

Something about the source needs to shake the student out of their cognitive and emotional equilibrium and create an opportunity to readjust and adapt to the disruptive information. This process of readjustment is characteristic of learning that is deep rather than merely strategic or superficial.

This disruptive quality cannot be planned for in advance. There is no set of criteria to determine whether a source will be disruptive. Instead, a source has to both fit with and raise questions about a researcher's background and experience in order to create an opportunity for the researcher to remodel his or her beliefs, doubts, and questions. A source that generates significant disruption (and therefore genuine learning) for one researcher may slip smoothly and quietly into another researcher's existing set of beliefs without a discernible impact. Likewise, one cannot plan on encountering a disruptive source when writing an initial outline for one's arguments. Instead, an instance of disruptive information becomes an occasion for rewriting one's outline.

But the spontaneous nature of disruptive sources does not mean that teachers can only leave it up to chance whether their students come across them. There are steps an instructor can take to increase both the probability and the value of encounters with disruptive information. Structuring assignments so that students consult sources with a range of perspectives and in a variety of formats adds to the likelihood that students will come across something novel. Asking students to provide a written account of the contrasts they discover demonstrates that they have consulted a range of perspectives (it also gives practice for more formal literature reviews).¹⁴ The observations regarding disruptive information also underscore the importance of not pushing students to consult highly technical sources until they have sufficient background to understand them. For first-year students especially, scholarly articles with a high degree of complexity, extensive jargon, or an emphasis on statistical data may prove too elusive for anything more than a

superficial interaction with the information, which makes it considerably less likely that the source will have the desired disruptive impact on the student's thoughts and feelings.

Holistic Judgments of Information's Value

The observations in the preceding sections give a developmentalist account of what makes information good. Good information has a disruptive impact on one's current thoughts and feeling, thereby creating an occasion for learning and growth. But how does one apply this notion of goodness when making judgments of information's value?

Evaluating information in this way requires evaluators to maintain awareness of the difference that the information makes in them. A complete evaluation is not strictly a matter of examining the characteristics of the information source. Instead, a complete evaluation requires reflection on the ways that information changes (or fails to change) the concepts, attitudes, and ways of imagining that comprise one's outlook. In this sense, the developmentalist approach to evaluating has much in common with the internally directed and metacognitive reenvisionings of information literacy found in influential articles by Dane Ward and Anne-Marie Deitering and Sara Jameson.¹⁵

The developmentalist view is essentially a matter of considering the ways that information is good for someone, and at the broadest level, information's salutary effects can be divided into two categories: the intrinsic and the instrumental. The intrinsic category's defining characteristics track smoothly with Kraut's account of human flourishing. In other words, information has intrinsic value for the audience insofar as it presents a new perspective on the subject matter that contributes to the audience's development, engagement, and enjoyment. Apprehending and processing the content exercises the audience's mind and heart in a manner that is consistent with healthy human functioning, and that is good in and of itself.

There is also an instrumental category of goodness to consider. From this perspective, good information calls forth thoughts, feelings, and images that permit us to interact with the world around us in increasingly advantageous, sustainable ways. This type of informed interaction is typically what we have in mind when we justify information literacy in terms of lifelong learning and successful participation in one's community. The United Nations Alexandria Proclamation on Information Literacy and Lifelong Learning exemplifies this manner of thinking about the value of information.¹⁶ Viewed instrumentally, good information helps us learn about the world around us, thereby empowering us to make more successful choices.

So, from a holistic perspective on information literacy, one that acknowledges both the inner and outer dimensions of information, information is good insofar as it (a) stimulates the healthy functioning of our cognitive, affective, and imaginative capacities and (b) helps us make successful choices by helping us understand important aspects of the world.

It might appear that we have traveled a long way to arrive at platitudes. But these apparently trite notions take on an additional significance when compared with the much narrower conceptions that lie behind our current teaching practices. For example, if a source satisfies the credibility criteria associated with the trust-based approach, that does not necessarily mean that its information will stimulate our inward capacities in significant ways. It may be too close to our existing beliefs to drive growth, too remote from our experiences to comprehend, or simply too dull to keep our attention.

Conversely, a source may fail to meet common criteria for credibility yet still enrich our inner life in important ways. Provocative works of fiction follow this pattern, but they are not the only forms of information that do so. An outsider's perspective on a controversial question may not admit of easy verification, but it can still alert us to possibilities not previously considered. A

carefully argued account, even if one ultimately arrives at good reasons for rejecting it, can provide healthy inner stimulation while also increasing the sophistication of one's grasp of important aspects of the world. It is important to apply credibility criteria when the situation warrants it, but credibility is not the only standard by which to evaluate information, nor is it necessarily the most important.

Based on these considerations, our aim as educators should be to help students develop a broad set of sensibilities for considering information's value. Our goal should be students who can discern and intelligently discuss more than a source's credibility or its usefulness in an argument. They should also be able to describe the way that information excites and challenges them, how it stretches their previous ways of thinking and feeling, and how their own particular constitution and background make a difference in the ways that they interact with information. We need to help our students become connoisseurs of information.

In advocating for the role that connoisseurship plays in evaluating educational environments, Elliot Eisner describes the bidirectional nature of the connoisseur's awareness:

To be a connoisseur of wines, bicycles, or graphic arts is to be informed about their qualities; it means being able to discriminate the subtleties among types of wine, bicycles, and graphic arts by drawing upon a gustatory, visual, and kinesthetic memory against which the particulars of the present may be placed for purposes of comparison and contrast.¹⁷

Connoisseurs of information do much the same thing: they deliberately reflect on elements of their inward life (memory, emotion, imagination) in order to interpret and judge the value of information for enhancing their perspective on the question. They judge the new in terms of how it builds on the old, the outward in terms of its ability to enrich the inward. But what can we as educators do to help students develop their capacity for appreciating information's impact on their growth?

Learning-Based Evaluation in First-Year Composition

Academic and Civic Implications

As a step toward integrating these theoretical considerations into actual practice, let us envision some of the ways that the developmentalist approach might inform teaching for first-year composition courses. First-year composition should be a priority because it typically comes early in a student's career and because of the nature of the research that students ordinarily perform in that class.

As a course that many students take early in their undergraduate years, first-year composition serves as an important foundation for subsequent student research. Alison Head and Michael Eisenberg identify the first year as a uniquely pivotal time in a college student's development as a learner because there is a significant danger that students will form research habits and then "flat-line" as researchers—that is, apply the same research techniques that got them through their first-year assignments to subsequent research challenges, regardless of whether these old techniques are a good fit for new subject matter.¹⁸ It is therefore especially important to make sure that our instructional practices in the first year cultivate habits associated with deep learning, not just the surface or strategic learning techniques that students can employ when they are just trying to get through their assignments.¹⁹ The research focus of many first-year composition courses makes them an important opportunity to develop students' skills, habits, and perspectives as self-directed learners because these dispositions form the basis for subsequent research that students do in college and even in life after college.

Furthermore, first-year composition represents an important opportunity to influence students' habits of learning as citizens. For many students, first-year composition is a unique point in the curriculum in which they are asked to learn about a controversial issue that interests them

and to present a compelling case for their own position on the question. Although they may consult the research of experts working in academic disciplines, the students' goal is not (necessarily) to develop their own expertise in a particular discipline. Rather, the aim is to formulate an educated opinion on a difficult question and to state their position clearly and persuasively.

Emphasis on nonexpert learning and communication makes the research in first-year composition very close to the sort of learning and expression required for participation in a democracy's public discourse. Few citizens in the United States, for example, are credentialed experts in fields directly related to the question of gun control, yet the ideal of active citizenship presumes that all participants will learn about the issue and develop a reasoned position on the question. First-year composition provides an important opportunity for practicing this sort of learning and reasoning.²⁰

Civic considerations make it particularly crucial for students in first-year composition to develop their sophistication as evaluators of information. A recent study by the Pew Research Center shows that political polarization is at its highest in decades, and it suggests that Americans' choices of where they get their political news are at least partially to blame.²¹ Because the current media landscape presents consumers with an unprecedented range of options, it is easy to restrict oneself to news sources that tend to confirm one's existing ideological leanings, a habit known as *selective exposure*. Such choices reinforce the current dynamic of increasing polarization: ideology tends to restrict media consumption to sources that corroborate existing beliefs, and partisan media consumption tends to deepen and solidify ideological preferences.²²

Introducing students to methods for evaluating sources in a way that makes their learning a central concern should help students raise questions about selective exposure in their own encounters with information. "Has this post on my go-to news site really left me better off? Have I

changed my thinking as a result of reading this? Has it helped me grow as a person?" If the answer to any of these questions is "no," developmentalism suggests that is time for the information connoisseur to move on to something more stimulating.

Suggestions for Practice

The following suggestions presume deep collaboration with instructional faculty to plan for information literacy outcomes, instruction, and assignments. Such relationships are not easy to achieve, but they are increasingly necessary as higher education comes to grips with how demanding the subject matter of information literacy really is.²³ Librarians will have limited success unless they can work with faculty to weave the reflective evaluation of information into the course.

A promising approach is to tweak a few elements that many composition instructors already include in their classes. The goal for these modifications is to structure the research assignment in a way that guides the students through a phase of genuine inquiry and discovery. As this article has argued, having students find sources to support their thesis is not enough to show them that information's most profound value lies in its capacity to stimulate deep learning.²⁴

In my experience, many first-year composition instructors wisely require their students to submit their work in progressive stages of the research project's development—not just a finished product at the end of the course. Two of these stages provide important points of leverage for ensuring that students engage in significant inquiry, which makes it easier to underscore the point that learning new ideas—not just backing up existing ones—lies at the heart of source-based research.

Early on, students are typically required to submit a statement of the scope of their research, often in the form of a "working" thesis, other times as a research question. Framed

properly, a research question serves as a better prompt for open-minded inquiry. If students settle on a thesis too quickly, they may mistakenly assume that research is a matter of finding sources to support one's thesis, thereby limiting opportunities for meaningful inquiry and intellectual growth. It is better to delay articulating a thesis until after students have had an opportunity for thoughtful interaction with a range of perspectives on their question.²⁵

Students are frequently asked to make a record of these interactions in the form of an annotated bibliography. The classic annotated bibliography assignment calls on students to find and cite a prescribed number of sources (some of which should be scholarly, others of which may be popular) and to provide a brief summary and evaluation of each source. Reimagining this staple of first-year research holds great promise for deepening the quality of students' inquiry into their chosen subject matter. It also gives students a chance to bring a broad set of sensibilities to reflecting on and describing their interactions with the sources they consult.

An annotated bibliography assignment for information connoisseurs might have students summarize and vet their potential sources in the usual way, but it would also include some of the following questions:

- Which information source surprised you the most? Why?
- Which position do you find most convincing? What factors in your personal background or belief-system contribute to this assessment?
- What would make the most convincing source even more convincing for you?
- Was the most convincing source also the most surprising source? Why or why not?
- Which source does the best job of taking other points of view into account, either incorporating them or rejecting them for good reasons? Explain.
- How would someone from a different socioeconomic group think about the question?

- What do you still need to learn more about?
- Are there creative works that relate to your question? Consider movies, TV shows, novels, short stories, music, or visual arts. How do these creative works compare to the informative works that you consulted for this project?

These questions encourage students to consult a range of sources and compare them to one another.²⁶ The questions also call on students to reflect on the ways that the information consulted relates to their own background and experiences. The hope is that these questions will prompt students to make the connections between information and experience that deep learners seem to form without even being asked. The intent is also to require students to articulate some of the beliefs and dispositions that they bring with them into the inquiry. “Owning” the background that colors their judgments gives students the opportunity to reflect on whether their predispositions are legitimate influences or whether they get in the way of objective inquiry.

Note also that the questions do not require a grounding in any particular discipline’s methods of inquiry. Instead, the questions ask student to read and reflect on a variety of sources, comparing the sources to one another and to students’ previous experiences with the subject matter. In this regard, the exercise models and adds refinement to the nonexpert, self-directed learning process that citizens engage in when they need to form an opinion on an issue for which they have no formal training. Consulting sources from a variety of perspectives provides a hedge against selective exposure. Reflection on one’s thoughts and feelings offers a chance to gauge the quality of learning that one is undergoing, which should offer some protection against the temptation to merely go through the motions of inquiry.

It is important to note that valuing information that promotes genuine learning is not necessarily a foreign concept for students. In a study to uncover how students experience

conducting research for an essay, Mandy Lupton interviewed students in a first-year environmental sciences class. Her findings include a broad range of perspectives. While respondents did indeed talk about research as a matter of finding credible evidence to support their point of view, they also spoke of research as an opportunity to learn more about important problems and about the ways that their discipline approaches those issues. Some even aspired to apply their newfound knowledge to make a difference in the problems they studied.²⁷ The task-centered, assignment-focused orientation one frequently sees in student researchers is not insurmountable. We just need to structure our classes and assignments to explicitly connect research experiences with students' existing desires to learn more about the world and about themselves.

The Bottom Line

I have compared the developmentalist perspective on evaluating information with popular use-based and trust-based approaches to teaching evaluation. The intent is not to offer a replacement for trust-based and use-based methods. The developmentalist, growth-based approach supplements the more popular methods because it emphasizes learning in a way that the more prevalent methods tend to overlook. Table 1 gives an overview of how the three methods compare and a sense of how each could be emphasized in different phases of students' learning about research and writing.

[Insert Table 1]

Learning is a crucial element in evaluation. By emphasizing impact on learning as an indicator of information's value, information literacy educators send students a message with important academic and civic implications. If significant development of one's perspective is a core indicator of information's value, then finding facts and figures that merely support what a person already believes represents a failure to use information for its most important purpose.

Research that merely backs up existing views is second-rate research. News sources that merely support an existing worldview fail to tell the reader anything meaningfully new. Students who recognize such experiences as lackluster are on their way to becoming connoisseurs of information who demand the very best. In an information environment marked by ideological echo chambers and fake news, demanding the best information may well be the most important disposition that an educated individual can possess.

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Notes

1. Richard Kraut, *What Is Good and Why: The Ethics of Well-Being* (Cambridge, MA: Harvard University Press, 2007), 5.
2. Elliot W. Eisner, "Educational Connoisseurship and Criticism: Their Form and Functions in Educational Evaluation," *Journal of Aesthetic Education* 10, 3–4 (1976): 140. See also Elliot W. Eisner, "On the Uses of Educational Connoisseurship and Criticism for Evaluating Classroom Life," *Teachers College Record* 78, 3 (1977): 345–58.
3. The CRAAP (currency, relevance, authority, accuracy, and purpose) Test can be found on this page: "Evaluating Information: Applying the CRAAP Test," Meriam Library, California State University, Chico, September 17, 2010, https://www.csuchico.edu/lins/handouts/eval_websites.pdf. The CARS (credibility, accuracy, reasonableness, and support) Checklist is available here: Robert Harris, "Evaluating Internet Research Sources," *Virtual Salt*, January 21, 2015, http://www.virtualsalt.com/evalu8it.htm_

4. As early as 2004, Marc Meola provides a thorough account of the shortcomings of the checklist approach. Marc Meola, "Chucking the Checklist: A Contextual Approach to Teaching Undergraduates Web-Site Evaluation," *portal: Libraries and the Academy* 4, 3 (2004): 331–44. Meola argues instead for a contextual approach to evaluation that involves "peer and editorial review, comparison, and corroboration" as touchstones for assessing the credibility of sources.
5. Miriam J. Metzger, Andrew J. Flanagin, and Ryan B. Medders, "Social and Heuristic Approaches to Credibility Evaluation Online," *Journal of Communication* 60, 3 (2010): 413–39.
6. A promising method for making credibility evaluation more intuitive is to have students come up with their own criteria for credibility. See Candice Benjes-Small, Alyssa Archer, Katelyn Tucker, Lisa Vassady, and Jennifer Resor, "Teaching Web Evaluation: A Cognitive Development Approach," *Communications in Information Literacy* 7, 1 (2013): 39–49.
7. On the distinction between *surface*, *strategic*, and *deep* learning, see Ken Bain, *What the Best College Students Do* (Cambridge, MA: Belknap Press of Harvard University Press, 2012), 34–48.
8. Meola, "Chucking the Checklist," 342.
9. Joseph Bizup, "BEAM [background, exhibit, argument, method]: A Rhetorical Vocabulary for Teaching Research-Based Writing," *Rhetoric Review* 27, 1 (2008): 72–86. It is important to note that Bizup does not present BEAM as a method for evaluating information sources. Instead, he presents it as a framework for critical reading of source-based texts (77–80), as a set of considerations for initiating students' source-based writing projects (81–82), or as a means of identifying gaps in students' arguments (82). But in the information literacy literature, it sometimes makes an appearance as a more sophisticated alternative to criteria-

based approaches to teaching the evaluation of information. For example, Kate Rubick suggests that BEAM can help students make more nuanced judgments about a source's authority than traditional methods of teaching source evaluation; Kate Rubick, "Flashlight: Using Bizup's BEAM to Illuminate the Rhetoric of Research," *Library Instruction West* 2014, Portland, Oregon, 3, http://pdxscholar.library.pdx.edu/cgi/viewcontent.cgi?article=1034&context=liw_portland. In a helpful blog post, Kate Ganski recommends BEAM as a method for teaching students to critically evaluate and incorporate sources into their own writing ("Flipping Freshman Composition Library Instruction," *My So-Called Librarian Life*, March 28, 2013, <https://ganski.wordpress.com/2013/03/28/flipping-freshman-composition-library-instruction/>). There is nothing wrong with using BEAM in this way, so long as using information to build an argument does not supersede using information to pursue inquiry.

10. Kraut, *What Is Good and Why*, 5.

11. *Ibid.*, 137.

12. *Ibid.*, 138–40.

13. *Ibid.*, p164.

14. Meola has argued compellingly that comparing resources is the best way for students to assess the relative values of different types of information. See Meola, "Chucking the Checklist," 341.

15. Dane Ward, "Revisioning Information Literacy for Lifelong Meaning," *Journal of Academic Librarianship* 32, 4 (2006): 396–402; Anne-Marie Deitering and Sara Jameson, "Step by Step through the Scholarly Conversation: A Collaborative Library/Writing Faculty Project to Embed Information Literacy and Promote Critical Thinking in First Year Composition at Oregon State University," *College & Undergraduate Libraries* 15, 1–2 (2008): 57–79.

16. United Nations Educational, Scientific and Cultural Organization (UNESCO), “Beacons of the Information Society: The Alexandria Proclamation on Information Literacy and Lifelong Learning,” Report from the High-Level Colloquium on Information Literacy and Lifelong Learning, Alexandria, Egypt, November 9, 2005, http://portal.unesco.org/ci/en/ev.php-URL_ID=20891&URL_DO=DO_TOPIC&URL_SECTION=201.html.
17. Eisner, “Educational Connoisseurship and Criticism,” 140.
18. Alison Head, “Learning the Ropes: How Freshmen Conduct Course Research Once They Enter College,” Project Information Literacy, December 5, 2013, 910, http://projectinfolit.org/images/pdfs/pil_2013_freshmenstudy_fullreport.pdf.
19. Alison Head and Michael Eisenberg’s surveys and interviews of undergraduate students prompted an important observation:

We see a trend that concerns us: Students in our study developed information strategy that was learned by rote, applied with dogged consistency, and resulted in respectable grades. Many students’ research methods appear to be far from experimental, new, developmental, or innovative. Course-related research assignments should not indirectly encourage students to half-heartedly engage in a narrow exploration of the digital landscape (e.g., assignments that state requirements such as “must use five sources cited in your paper”).

Alison Head and Michael Eisenberg, “Lessons Learned: How College Students Seek Information in the Digital Age,” Project Information Literacy, December 1, 2009, 34, www.projectinfolit.org.

20. For recent thought on the connections between first-year composition and citizenship, see Chase Bollig, “‘Is College Worth It? Arguing for Composition’s Value with the Citizen-Worker,” *College Composition and Communication* 67, 2 (2015), 150–72. Bollig argues for combining longstanding justifications of composition’s value in terms of effective citizenship with justifications in terms of preparedness to compete in a precarious economy; otherwise,

economic concerns will likely crowd out other ways of understanding composition's value.

Bollig's ideal of the citizen-worker is ready to employ knowledge and communication skills to further economic productivity; the citizen-worker is also prepared to critically examine workplace conditions and to advocate for improvements in the relevant discourse communities. Bollig's recommendations could also apply to justifications of information literacy's value in an increasingly vocation-centered higher-education context.

21. Amy Mitchell, Jeffrey Gottfried, Jocelyn Kiley, and Katerina Eva Matsa, "Political Polarization and Media Habits," Pew Research Center, October 21, 2014, <http://www.journalism.org/2014/10/21/political-polarization-media-habits/>.
22. An influential study by Natalie Stroud establishes political beliefs as a significant determinant of media consumption. This study also provides evidence of a causal relation in the reverse direction, that is, consumption of partisan news media is associated with higher rates of self-identification as a strong conservative Republican or a strong liberal Democrat. Natalie Jomini Stroud, "Media Use and Political Predispositions: Revisiting the Concept of Selective Exposure," *Political Behavior*, 30, 3 (2008), 341–66. Viewed in light of the Pew study, it would appear that selective exposure and ideological commitment reinforce each other.
23. For recent thought on the changing role of the librarian in information literacy education, see Melissa Bowles-Terry and Carrie Donovan, "Serving Notice on the One-Shot: Changing Roles for Instruction Librarians," *International Information & Library Review* 48, 2 (2016): 137–42.
24. By conducting a discourse analysis in a university-level writing class, Wendy Holliday and Jim Rogers discovered that the instructor, the librarian, and the students exhibited two contradictory ways of talking about research. When talking about research in terms of "finding sources," participants were found to have in mind research and writing strategies that lead to

surface learning, while talk about research in terms of “learning about” was associated with a more genuine engagement with the subject matter typical of deep learners. The authors have resolved to be more intentional in the way they frame research activities when communicating with students. We need to be similarly mindful when we talk with students about evaluating information. Wendy Holliday and Jim Rogers, “Talking about Information Literacy: The Mediating Role of Discourse in a College Writing Classroom,” *portal: Libraries and the Academy* 13, 3 (2013): 257–71.

25. Restructuring assignments to permit more exploration may not be such a hard sell with composition faculty. Jennifer Nutefall and Phyllis Ryder explore librarian and writing-instructor perspectives on when students should formulate their research questions. Librarians interviewed preferred to have students articulate their questions early in the research process because doing so tends to make subsequent stages of research more manageable. For writing instructors, it was important that students undertake an extensive period of reading and thinking before settling on a meaningful question. The authors recommend collaborative planning between librarians and writing instructors to determine how best to support students who are developing a focus for their research. Jennifer E. Nutefall and Phyllis Mentzell Ryder, “The Timing of the Research Question: First-Year Writing Faculty and Instruction Librarians’ Differing Perspectives,” *portal: Libraries and the Academy* 10, 4 (2010): 437–49. Zeiger argues that composition students should be taught to write exploratory essays (which alert readers to a multitude of possibilities) before they learn to write expository essays (which marshal evidence in support of a single solution). Exploratory essays offer practice with examining an issue from multiple perspectives, a skill that does not get enough attention in classes that emphasize thesis-driven writing. William Zeiger writes:

By concentrating almost exclusively on thesis-support exposition in college composition classes, we are implicitly teaching that the ability to support an assertion is more important than the ability to examine an issue . . . As long as the goal and product of writing is to demonstrate the validity of a thesis, the implicit message is that *proving* is more important than *finding out*.

William Zeiger, "The Exploratory Essay: Enfranchising the Spirit of Inquiry in College Composition," *College English* 47, 5 (1985): 454–66, quotation on 458.

26. Meola identifies comparison as an authentic basis for students to evaluate sources (as contrasted with considering each source individually against a set of criteria). Meola, "Chucking the Checklist," 341.

27. Mandy Lupton, "Evidence, Argument, and Social Responsibility: First-Year Students' Experiences of Information Literacy when Researching an Essay," *Higher Education Research and Development* 27, 4 (2008): 399–414.
