CHAPTER 6.

BEYOND "I KNOW IT WHEN I SEE IT": WEC AND THE PROCESS OF UNEARTHING FACULTY EXPERTISE

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This chapter considers a paradox at the heart of WEC and, arguably, all WAC work: the disciplinary immersion that leads to expertise makes it difficult for faculty members to articulate and pass on their knowledge of writing in the disciplines. Drawing on research in WAC/WID, psychology, and education, the chapter offers tools for WEC facilitators. First, it outlines three socio-cognitive frameworks that can help faculty become aware of their blind spots and tacit expectations. Second, it offers a heuristic to describe faculty members' key realizations about writing in their disciplines as they work to unearth disciplinary expertise. Finally, a case study from a computer science department in a small liberal arts college illustrates the application of these tools in the context of the WEC process. Implementing a WEC initiative increases faculty members' awareness of and attention to their own expertise, expectations, and potential blind spots as they articulate the characteristics, values, conventions, and forms of writing and research in their majors.

Over the last five years of leading a writing-enriched curriculum (WEC) initiative with departments at Colby College, I have found that working through the WEC process with faculty is some of the most meaningful, holistic, difficult, and transformative work I have done as a writing program administrator (WPA). Our faculty, similarly, have found that the collaborative work of articulating their disciplinary writing abilities and creating departmental writing plans to be among the most challenging and revelatory work they have undertaken as a department (see also Anson's Introduction and Chapter 2, this volume). Moreover, faculty members are often surprised and sometimes frustrated by the difficulties of WEC work. As experts in their disciplines and experienced teachers, faculty

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members might surmise that they could define writing and list writing-related abilities for their majors without a lot of special preparation or time.[1] But we have consistently found that this is not the case. Why is it so difficult for faculty members to conceptualize writing and writing instruction in their disciplines?

The literature in writing across the curriculum (WAC) and writing in the disciplines (WID) provides some answers to this question. Studies of the development of the disciplines have shown that faculty members typically see disciplinary content knowledge as distinct from writing and that the process of joining a discipline as an expert practitioner is usually tacit. The first holds true largely because, as David Russell argues in *Writing in the Academic Disciplines* (2002), through the development of the modern university, specialized disciplinary content came to be seen as separate from a generalized idea of academic writing. This separation has contributed to a widespread view of writing as a "transparent recording" of thoughts and physical observations rather than a rhetorical medium that shapes and helps to create knowledge in a discipline (Russell, 2002, p. 10; see also Macdonald, 1994). Moreover, as Carter argues in "Ways of Knowing, Doing, and Writing in the Disciplines," faculty members usually learn disciplinary writing "not by any direct instruction but by a process of slow acculturation through various apprenticeship discourses" (2007, p. 385). Thus, many faculty members have never thought explicitly about how they learned to write in their disciplines or even realized that they have discipline-specific assumptions, expectations, and expertise in writing in the disciplines (Moor et al., 2012).

On the contrary, faculty members often "assume that students share their perceptions and expectations about writing . . . The writing, genres, and expectations of their disciplines have become second nature" (Russell, 2001, p. 287). It is this seemingly discreet, "second nature" invisibility of their knowledge that makes it so difficult for them to articulate specific writing expectations and abilities in their disciplines. As highly educated researchers, writers, and thinkers, faculty members are immersed in specific disciplinary contexts that obscure their own awareness of their expertise and the processes by which they obtained it. Ironically, experience and time compound the problem. "Because instructors primarily teach and study within their disciplines," Joanna Wolfe et al. argue, "they come to mistake their specialized disciplinary ways of thinking and writing as universal skills" and can even come "to view their own discipline's values, assumptions, and conventions as the norms in other disciplines" (2014, p. 43).

1 In this chapter, I use "expert" in the sense of someone who has an unusual and deep body of domain and task-specific knowledge (Hinds, 1999) upon which they draw when solving problems and responding to new situations in their fields (Dreyfus, 2006). Faculty members are typically, and reasonably, referred to as experts in this sense.

Similarly, Adler-Kassner and Majewski, building on Lave and Wegner, explain that "the more expertise members in a community of practice have, the less visible practices associated with that community become. Instead, these practices seem like commonplaces that 'everyone knows'" (2015, p. 188). Thus, the very disciplinary acculturation and immersion that lead to disciplinary expertise can support an inaccurate view of writing as a general, transparent skill and make it difficult for faculty members to articulate and pass on their knowledge of writing in the disciplines.

As Flash and Anson establish in the opening chapters of this collection, the writing-enriched curriculum (WEC) approach is an evolution of WID that offers an iterative, faculty-driven, regularly assessed model for infusing writing into undergraduate disciplines and majors. Engaging faculty members' disciplinary knowledge, attitudes, and expertise is central to WEC work. Yet there is limited literature in WAC/WID and writing studies that delves into the dynamics of how groups of faculty come to articulate their tacit knowledge and disciplinary expectations for writing (see Flash, 2016). Research that does focus on faculty members' conceptions of disciplinary writing illuminates their assumptions, values, and beliefs about academic writing, but it is primarily based on individual interviews rather than examinations of groups or curricular systems similar to the collaborative, discursive processes at the heart of WEC (e.g., Brammer et al., 2008; Salem & Jones, 2010; Thaiss & Zawacki, 2006; Zhu, 2004). Reflecting a central philosophical tenet of the field, WAC/WID scholarship often argues that faculty members should be the ones to define the expectations for disciplinary writing and writing instruction. For example, Carter (2007) advocates that writing professionals "ask faculty" to describe disciplinary ways of doing and writing (p. 389) as the first step to creating outcomes for assessing writing. Adler-Kassner and Majewski argue that writing specialists should discuss disciplinary threshold concepts, "asking faculty about 'their own forms of evidence and ways of knowing'" to engage them through their disciplinary investments (2015, p. 187). But what if this very identification is the challenge? What if faculty members stall at "I know it when I see it" and struggle to describe specific ways of writing, thinking, and researching that they expect of graduates in their majors?

Advocating that writing professionals "ask faculty" can obscure the fact that most faculty members will need not only support but also a process like the writing enriched curriculum model to become aware that they even *have* disciplinary assumptions about writing (see also Luskey and Emery in Chapter 4 of this volume). It can also obscure the fact that reckoning with tacit expertise and disciplinary blind spots will always be part of the process of articulating expectations and teaching writing in the disciplines. Indeed, in concluding their study

of a new English WID curriculum based on the *topoi* of literary analysis, Wilder and Wolfe caution that "reliance upon faculty to identify the procedural knowledge they have gained largely tacitly may prove highly difficult because faculty may be unaware of the degree to which they have internalized discipline-specific expectations for 'good writing'" (2009, p. 196). In facilitating WEC at Colby, I have found faculty members' lack of awareness and internalization, even universalization, of discipline-specific writing expectations to be common across departments. This challenge, as other chapters in this volume also illustrate, is a central and productive driver of WEC work—one that, in my opinion, WEC facilitators must recognize and embrace.

As I developed our WEC initiative, I began to think about how faculty learn to define writing and writing instruction in their disciplines and majors. What information and processes help them? What constrains them? What kind of shifts in faculty members' thinking might a WEC consultant look for through this process? Flash (Chapter 1) and Anson (Introduction and Chapter 2) in this volume outline the assumptions and processes of the WEC model and provide a compelling answer to the first question. This chapter complements that evidence and considers the questions of constraints and faculty realizations. In the sections that follow, I provide some institutional context for our WEC initiative; draw on research in WAC/WID, psychology, and education to outline three socio-cognitive frameworks that can help faculty become aware of their blind spots and tacit expectations; provide a heuristic to describe faculty members' key realizations about writing in their disciplines; exemplify with a brief case study from the Computer Science department; and conclude with implications for future study.

INSTITUTIONAL CONTEXT: WEC AT COLBY COLLEGE

It was my sense of the challenges of insider positioning as well as the inductive, faculty-driven nature of the WEC model that drew me to it. As the inaugural Director of Colby's Writing Program, I started WAC work slowly by attending department meetings, visiting classes, and holding workshops on WAC best practices and principles. In my first few years, I worked with faculty to develop dozens of new first-year, writing-intensive courses (called W1s), begin writing assessment, and integrate the Farnham Writers' Center and Writing Program. The Dean of Faculty had also asked me to "figure out what to do with upper-level writing." Our first step, working with faculty on the writing committee, was to create upper-level, writing-intensive WID course designations (called W2 and W3). We offered modest curriculum development grants and worked with faculty across departments to create these courses, which are taught by faculty across the curriculum (see Sheriff & Harrington, 2017 for more on the Writing

Program's development). These upper-level W courses were an excellent way to recognize faculty already teaching writing-intensive courses, signal the importance of writing instruction to students across the College, and bring in new faculty members interested in more intentional approaches to writing instruction.

However, as the WAC literature attests and as Anson points out in the Introduction to this volume, the benefits of writing-intensive courses can become siloed with individual courses or faculty. We needed a more systematic way to reach beyond the willing and, important in our context, to involve interested departments that could not staff capped writing-intensive courses. Chris Anson, whom I had been fortunate to bring to campus as a WAC workshop leader, recommended that I look into the University of Minnesota's WEC model. I met with Pamela Flash at the 2014 International Writing Across the Curriculum conference she chaired at Minnesota, and she agreed to partner to test the portability of the WEC model to a small-college setting. Colby was the first liberal arts college to implement the WEC model, including the data collection, structured meetings, and iterative writing plan creation and assessment cycle. Starting slowly in 2015, we are now in the fifth year of implementing a WEC initiative to enhance writing instruction in the majors.

Colby is a small liberal arts college of about 2,200 students that does not offer pre-professional or graduate degrees. It is quite different in size and scope than UMN, yet we have found that WEC approach fits Colby's culture well. At Colby, the majors are the center of gravity, and faculty members design all (or most) of their own courses and tend to know a fair amount about the details of their departments' curricula. WEC's emphasis on faculty members' ownership of writing in their majors and the process of meeting with whole departments to study the curriculum and articulate shared writing abilities suited our context. Six departments, including the largest majors on campus, have undertaken WEC initiatives and have active writing plans in first, second, and third editions. (See Flash, Chapter 1 of this volume, for more on the WEC model for developing writing plans.) These include, in order of adoption, art, computer science, biology, environmental studies, psychology, and chemistry.

In each department I've worked with, faculty members have consistently remarked upon (1) how much they have learned from their colleagues' articulation of their writing expectations and assumptions and (2) how rare and valuable it is to have such holistic conversations about their curricula.[2] These rich conversa-

2 Such comments about the value and rarity of conversations about disciplinary outcomes and concepts align with the findings of Anson's study in this volume and other writing studies scholarship, particularly that focused on faculty development and, more recently, threshold concepts (see, for instance, Adler-Kassner & Majewski, 2015; Bunnell & Bernstein, 2012; Carter, 2003; Malenczyk, 2016; Wardle & Scott, 2015).

tions and the not infrequent ah-ha moments are a result of, as Flash puts it, the fact that "the WEC model takes primary aim at faculty conceptions of writing and writing instruction" (2016, p. 10). To initiate WEC, faculty members must interrogate their expertise with others, discussing and debating what is essential about research and writing in their disciplines and, ultimately, articulating their conclusions in ways that students can understand.

WRITING SCHOLARSHIP ON EXPERTISE

Expertise, particularly as it relates to knowledge acquisition and writing development, has long been of interest to scholars of rhetoric and composition, WAC, and WID. Geisler, for instance, reminds us that the "new rhetoricians" in the 1950s and 1960s—e.g., Olbrechts-Tyteca, Perelman, and Toulmin—were concerned with the rhetorical aspects of expertise and "suggested that expert practitioners in a domain employed field-specific reasoning in support of assertions about what to do and what to believe" (1994, p. 44). The cognitive study of composition typically associated with Flower and Hayes (e.g., 1981) used social scientific methods to compare novice and expert writers' behaviors, concluding that experts posed more sophisticated, rhetorically situated problems to themselves. Carter, as exigence for a theory of expertise in writing based on global (general, heuristic) and local (disciplinary, case-based) knowledge, asserts that "what we do in our writing classrooms is determined, implicitly or explicitly, by our concepts of what it means to be an expert writer and how writers attain expertise" (1990, p. 280). Given this history, I concur with Rice's recent argument that "a focus on expertise has led to pedagogical innovations like Writing Across the Curriculum (WAC) and Writing in the Disciplines (WID)" (2015, p. 120).

In *Academic Literacy and the Nature of Expertise*, Geisler argues that modern academic literacy bifurcates expertise into separate dimensions of "domain content" and "rhetorical process." (1994, p. 89). While elements of the former are conveyed through general education, the latter "more informal and tacit knowledge of rhetorical process remai[n] the more or less hidden component of advanced training" needed for professional expertise (Geisler, 1994, p. 89). In framing these two dimensions of expertise, Geisler challenges writing professionals to reveal and bridge the "great divide" that the academy, in service to the professionalization movement of the twentieth century, created between experts and the general public. In considering the political, social, and economic implications of writing instruction and programs, WAC scholarship has taken up this challenge. In delving deeply into the rhetorical conventions, genres, and activity systems of the disciplines, WID scholarship has helped to demystify and challenge the separation of domain and rhetorical process knowledge.

To this end, WID research has contributed to our understanding of disciplinary genres and purposes (e.g., Bazerman, 1988, 1997; Fahnestock & Secor, 1991; Herrington, 1985; Johns, 2002) and rhetorical and disciplinary contexts for writing (e.g., Anson, 2008; Beaufort, 2007; Johns, 2002; MacDonald, 1994). Building on this foundational work, WAC and WID scholarship has also interrogated the diverse and frequently tacit nature of faculty expectations for and definitions of "good writing" (e.g., Carter, 2007; MacDonald, 1994; Moor et al., 2012; Wilder, 2012). This literature can help new WEC facilitators increase their knowledge of other disciplines' discourse conventions, which may also help them build credibility with faculty colleagues. Yet, I would argue that the WAC/WID literature could engage more fully with Geisler's powerful theory of the academic bifurcation of expertise and its consequences, including the common view of writing as a transparent tool for communicating observations and data.[3] In addition, there is a large body of social science research (e.g., in psychology, education, and sociology) on the dynamics and constraints of expertise that can be useful to WEC facilitators. In the next section, I will briefly discuss selected concepts that can complement our understanding of the role of expertise in WAC/WID and our work with faculty as WEC facilitators.

EXPERT CURSES AND BLIND SPOTS

Research in psychology and education offers a number of socio-cognitive frameworks that are helpful to understanding the challenges of faculty members' disciplinary acculturation and expertise. This literature examines how expertise can make it difficult for faculty members to break down a problem, articulate their own process for thinking through a disciplinary issue, realize they are skipping steps, and estimate the time it takes novices to write or undertake new tasks (Hinds, 1999; Nathan & Petrosino, 2003; Nickerson, 1999). In this section, I will briefly outline three that are especially useful for writing specialists and WEC facilitators: the curse of knowledge, the curse of expertise, and expert blind spots.

Social and cognitive psychology studies of how people assess others' knowledge can help writing specialists appreciate why it can be difficult for faculty members to externalize, adjust, and unpack their own expertise. This research has shown

3 Some scholars have suggested that because the "compact" nature, in Toulmin's terms, of most science disciplines results in greater standardization of genres than in "diffuse" (primarily humanities) disciplines, the view of writing as transparent may be more common and appealing (Thaiss & Zawacki, 2006; Wiles, 2014). However, studies of writing in philosophy, literary studies, and first-year composition show that faculty in humanities disciplines share similar assumptions about the transparency of their disciplinary texts (Geisler, 1994; MacDonald, 1994; Wolfe et al., 2014).

that people take their own experiences and knowledge as a baseline for what they assume others know, adjusting their assumptions based on context, external cues, and repeat experiences. However, it is nearly impossible to ignore one's own knowledge, especially when that knowledge is deep and was not recently acquired—as is typically the case with experts. When experts gauge what others know or can do, they cannot help but refer to their own level of knowledge or performance (also called anchoring). They therefore fail to adequately adjust for the differences between themselves and novices, and they overestimate the ease or speed with which novices would perform (Epley et al., 2004; Kelley, 1999; Nickerson, 1999). Researchers call this phenomenon the *curse of knowledge*, "a bias in which knowledgeable people are unable to ignore information they hold that others do not" (Hinds, 1999, p. 218). Avoiding the curse of knowledge is especially difficulty for experts, like faculty members, who have a great deal of unusual or specialized knowledge that, over time, has become second nature.

In a foundational study of this concept, Hinds gave groups of experts, intermediates, and novices a variety of complex tasks (a series of cell phone tasks and a model plane assembly) and asked participants to predict the amount of time it would take novices to complete them. She found that, in keeping with the curse of knowledge, experts systematically underestimated how much time novices would need. Unexpectedly, Hinds (1999) also found that, as compared to both novices and intermediates, experts made less accurate predictions and were more resistant to "debiasing techniques," such as being prompted to remember their own learning experiences or being given a list of common problems novices encounter. Hinds coined the phrase the *curse of expertise* to describe this phenomenon of experts' particular underestimation and resistance to debiasing. This concept can help WEC facilitators appreciate why it is hard for faculty members to anticipate problems students will encounter with research and writing in their disciplines and why they may underestimate the difficulty or time students need. Learning about these concepts can help faculty realize that (in social science parlance) their expertise "curses" their ability to gauge students' knowledge accurately and may make them undervalue information that could help adjust their assessments. This knowledge may, in turn, make faculty members more open to the value of explicit scaffolding, models, and formative feedback. Moreover, given that such pedagogical techniques help make disciplinary assessment visible, WEC facilitators can also explain that WEC work and wrestling with these "curses" has the potential to make their teaching more inclusive and accessible to a diverse student body.

In the specific context of education, scholars have studied the impact of teachers' prior education and pedagogical knowledge on their approach to instruction. Nathan and colleagues developed a theory of the *expert blind spot*, which posits that educators with advanced training in an academic discipline,

such as a Ph.D., "tend to use the powerful organizing principles, formalisms, and methods of analysis that serve as the foundation of that discipline" to guide their instruction rather than the level of knowledge or typical development of novice learners in that subject area (Nathan & Petrosino, 2003, p. 906). Educators with the highest level of specialized subject-area knowledge were the most likely to think through such disciplinary schemas, leading them to inaccurately assess problem difficulty level and novices' learning development (Nathan & Koedinger, 2000; Nathan & Petrosino, 2003). Thus, in a twist on the curse of knowledge, "expertise may make educators blind to the learning processes and instructional needs of novice students" while, unfortunately, also making them "entirely unaware of having such a blind spot" (Nathan & Petrosino, 2003, p. 906). WEC facilitators can help faculty become aware that they *have* expert blind spots and that their deep immersion in their subject matter causes them to think about, organize, and retrieve information differently than novice students.

Pushing awareness and conscious action into the unconscious relieves the cognitive load, but it also obscures how and when learning occurred in the first place. Faculty members may, therefore, skip steps, reason intuitively, and go too fast for less knowledgeable others, whether they be students or non-specialist colleagues. These socio-cognitive frameworks can give WEC facilitators useful language to share with faculty and a better understanding of why students may report that faculty move too quickly, skip steps, or fail to adequately explain their expectations for writing.

FACULTY'S PROCESS OF COMING TO AWARENESS OF WRITING IN THEIR DISCIPLINES

As a tool for WEC facilitators, I have synthesized insights from the literature on WAC/WID and expertise with my experience as a WEC facilitator into a descriptive heuristic (see Figure 6.1). It describes faculty members' key "realizations" in the process of unearthing their writing expectations and reckoning with the tacit dimensions and curses of disciplinary expertise. Because my institution is a small liberal arts college, some aspects may not be generalizable to other institutions. But I hope this heuristic will help WEC facilitators gauge, and perhaps even anticipate, stages in faculty members' thinking as they wrestle with describing and assessing writing in their disciplines. I have listed the realizations in an order I have often seen as a WEC facilitator, but faculty members may come to them in many different ways. Based on their fields, reflective practice, or previous experience with assessment and outcomes, some may start at the end of the list. Others may take a more circuitous path to understanding how their writing assignments and expectations instantiate tacit disciplinary conventions.

Faculty members become aware that they have . . .

- unarticulated expectations for student writing in their majors
- tacit disciplinary expertise, including unarticulated rhetorical process knowledge
- tacit assumptions that some disciplinary conventions for "good writing" are generalizable to all academic writing or are norms in other disciplines
- been assigning but not naming or teaching some departmental writing abilities
- been assuming students have knowledge of disciplinary rhetorical processes that comes with expertise
- been bringing tacit disciplinary expertise and expectations to their criteria for evaluating student writing

Figure 6.1. A heuristic to describe faculty realizations about writing in their disciplines.

Moving through these realizations—often with recursive returns to earlier insights as new information arises—is essential to helping faculty members avoid vague or universalized notions of "good writing." But, as with any intellectual endeavor, iteration may also lead to moments of increased uncertainty as faculty members reassess prior knowledge or moments of frustration as they identify gaps in their understanding or instruction. Resisting the curses of knowledge and expertise requires intentional engagement and the support of others—fellow colleagues, WEC interlocutors, and, perhaps, students—to recognize one's disciplinary knowledge and to recalibrate expectations and instruction accordingly (Donovan & Bransford, 2005). Coming to these realizations can help faculty members open up their ideas about writing and see it as more dynamic and more dependent on audience and context than they had previously realized. Ideally, faculty members also realize that writing in their disciplines involves not just skills and conventions but also epistemologies, values, and assumptions that may (or may not) be shared with other disciplines. The end goal, in other words, is to help faculty members see that written communication in their disciplines involves, in Geisler's terms, both disciplinary domain content and rhetorical process knowledge.

For some faculty members, the experience of coming to these realizations through facilitated departmental discussion is what induces them to interrogate their disciplinary practice and expertise. For instance, I was struck by a discussion in a natural sciences department where a faculty member argued that the ability to "write concisely" was essential to good writing in their discipline but did not need to be defined. As an attribute, "concise" seemed so commonplace and clear that

they doubted there was much value in describing how to evaluate it. Moreover, the evaluative criterion they initially articulated was rather circular: "concise writing uses as few words as possible without repetition." When the group discussed what "repetition" looked like in writing, it was soon evident that they were invoking a discipline-based notion of "concise" because additional knowledge of the lab report genre, assumed audience, and purpose were necessary to decide what was useful repetition versus unnecessary restatement or distracting detail. The discussion helped this faculty member realize that sometimes students struggled to write concisely because they did not have the disciplinary expertise to judge what details to include or strike. By acknowledging this, they began to "un-curse" the expertise that had obscured their rhetorical process knowledge and find a compelling reason to provide more explicit instruction in the genre conventions and audience expectations behind the concise writing they wanted to read.

Overall, the WEC process of articulating evaluative criteria for disciplinary writing helps faculty to identify the component parts and textual effects of particular writing abilities they value. This, in turn, reduces the tacitness of their expectations and, frequently, helps them connect individual writing abilities to larger disciplinary values and practices. In the next section, I will illustrate this iterative, collaborative process with examples from our WEC initiative with Computer Science.

IT'S THE CONSTANT PROCESS OF QUESTIONING: WEC IN COMPUTER SCIENCE

Computer science (C.S.) was one of Colby's two pilot WEC departments and the first to apply for an internal grant to create a writing plan and begin the WEC process. They were eager to do this work because they value writing and wanted their majors to develop strong communication skills. They felt this was especially important at a liberal arts college where a computer science major could not be as highly specialized and technically focused as might be possible in a large university context. At the same time, as a very small department—four faculty at the time, one of whom was brand new—they also felt significant time pressure from their rapidly growing major as well as the fact that most classes had over 40 students and required faculty to quickly turnaround responses to weekly projects.

The chair and faculty liaison were especially upfront about the fact that they knew little about how to teach writing but were eager to learn. In fact, it was refreshing to work with this group of faculty members because they were so open and non-territorial through detailed discussions about their teaching and curriculum. As the faculty liaison said in a later conversation, "it was nice working with you because you really respected our expertise. We may know nothing

about writing, but we do know computer science!" Ultimately, however, what I came to realize was that C.S. faculty saw their expertise almost solely in terms of domain content knowledge, which obscured the fact that they *did* know a lot about and—in some cases had strong opinions on—writing and research in their discipline. This bifurcation of expertise also fostered a view of writing as a transparent, generalizable set of skills largely separate from C.S. "content."

As faculty members articulated disciplinary norms, forms, and conventions for writing in C.S., their dialogue and the facilitators' questions helped them to realize they had many unarticulated assumptions about "good writing" and their expectations for students' writing in their majors. For example, even though we had talked about the fact that "writing" could mean anything from musical notation to posters to code and cited the Minnesota WEC Program's capacious definition of writing, "visual marks that convey meaning," C.S. faculty remained focused on traditional alphabetic prose. They expressed concern over including forms that integrated text and visuals, like scientific posters, even as they articulated the importance of figures, precise descriptions of screenshots, or technical blogs when giving examples of disciplinary writing types and characteristics. Moreover, their feeling that they "should" adhere to a unimodal, generalized conception of writing continually broke down in discussions of their desired writing abilities for majors.

Take, for instance, this exchange about the three different styles of writing (their terms) they wanted C.S. majors to practice:[4]

> **FM (Faculty Member) 4**: [to FM 2] Where would a PowerPoint presentation, like for an interview talk—like FM 1's assignment, for example—fit into this? Would you consider that a fourth style?
>
> **FM 2**: I mean, I guess the question is, are we throwing things like PowerPoint presentations into the writing category?
>
> **WS** (Writing Specialist) 1: Yes.
>
> **FM 2**: 'Cause that's something that we've got that in our curriculum. And we've intentionally placed it there in a couple of different places.
>
> [Pauses to think.] It's sort of an explanatory style, but it's a very visual explanatory style.

4 The institutional review board at my institution found this study, which included citing anonymized excerpts from transcripts, to be exempt research. In accordance with standard protocols, participant names have been coded to protect their privacy. FM stands for faculty member and WS for writing specialist. In this meeting, there were two writing specialist facilitators and four faculty members present.

Though the second faculty member felt the need to ask if PowerPoint "counts" as writing, they also stated that C.S. had "intentionally placed" such multimodal communication assignments across their curriculum. Ironically, in the context of this situation, their tacit, alphabetic assumptions about "good writing" initially prevented C.S. faculty from seeing this curricular decision. Faculty members also realized that the "explanatory style" of writing they identified as important to the major did not account for the C.S. convention of integrating text and visuals to explain a process or product under consideration (e.g., in software debugging). This conversation led to a useful discussion of "concise"—a term they'd included in their list of C.S. writing characteristics but not yet defined—as particularly important to balancing text and visuals in posters and short presentations.

Another interesting example arose through dialog and self-study over the first few WEC meetings (see Pamela Flash, this volume, for details of the process). In our first meeting, faculty members brainstormed a list of characteristics of writing in Computer Science. In response, one faculty member quickly answered: "Readable. Well-organized." The other faculty members agreed. When the writing specialist asked the faculty member to clarify what they meant by these terms, she elaborated by adding speed and structure as concepts:

> **FM 1**: I think these two [readable and well-organized] are quite relevant to each other. I mean one affects the other. So, when I write a paper, I want the reviewer can scan my paper in ten seconds and understand what I'm talking about.
>
> **WS 1**: So, this is about fast comprehension? Several: Yes.
>
> **WS 2**: Which is about writing a good abstract? Or using your headings?
>
> **FM 2**: It's about having sentences at the beginning of each paragraph so that you can just read the first sentence of each paragraph and get a sense of what the paper is. I mean, in some sense, it's about fast grading.
>
> **FM 3**: Exactly, absolutely.

The comment about "fast grading" elicited agreement and some sheepish laughter. That faculty wanted students to structure their descriptive wiki "write-ups" for fast reading came up a couple of times in the first meetings. It was an admission framed as driven by the struggle to keep up with the heavy grading load, disconnected from disciplinary conventions or values.

The writing specialists continued by asking about faculty members' definition of "well organized" as a key characteristic of good writing and its connection to speed:

WS 1: So this is skimmable?

FM 3: It's not . . . I think it also means that they explicitly state the bigger picture aspects of it rather than just have the details.

WS 1: So that's the topic sentence idea of it [points to "topic sentences" on the board in the brainstorming list]. So, there's a hierarchy in the ways they're representing ideas so that you can skim quickly with these topic sentences.

FM 2: Yes, hierarchy!

FM 3: But I'm not even saying that about the topic sentences. I'm saying that the thing *above* the topic sentences is really important to have. And *that's* what might not be there. Like "The point of this project was to write a program that would *this*." Not just launch into, "I made this in class and that class and this other class." But something that's going to tell me . . .What are we [the writer and reader] doing here?

WS 1: And these [purpose for writing, topic sentences] tie back to fast comprehension.

FM 2 and 3: Yes!

As this exchange illustrates, faculty may struggle to find the language to articulate their implicit understandings of disciplinary writing. But with continued dialog and drafting, C.S. faculty realized they were bringing tacit *disciplinary* expectations and expertise to their preferences and criteria for evaluating student writing (see Figure 6.1). Faculty member 3, in moving beyond surface features like topic sentences, connected a disciplinary preference for hierarchical organization to the rhetorical expectation that these texts provide an explicit statement of the project's purpose before describing the details of implementation.

Subsequently, the first item on their writing plan's list of graduation-level writing abilities for the major pertained to the descriptive writing style C.S. faculty identified early on as important: "1. Students will be able to create precise descriptions of processes, data, and/or findings such that readers are able to quickly understand and are persuaded by the presentation." In articulating this ability, faculty decided that "precise" was more accurate than "concise," which, to them, too-simply implied shorter text. By suggesting that C.S. readers would be persuaded by precise descriptions they could "quickly understand," this ability also began to connect to discipline-based values more concrete and specific than "well organized." However, as they drafted criteria by which to evaluate this ability, the reference to speed in "quickly understand" was maintained, but the connection to organization was lost (see Table 6.1). This first draft of their

criteria attempts to break down the writing ability into components, but there is no indication of how precise descriptions would lead readers to "quickly understand." Indeed, when faculty used some of these criteria to assess a writing sample, readers struggled to apply them and realized they needed more detail.

Table 6.1. Computer science draft 1 of writing ability #1[5]

Graduation-Level Writing Abilities *Students will be able to . . .*	**Criteria for Assessing Writing Abilities** *The text . . .*
1. Create **precise descriptions** of processes, data, and/or findings such that readers are able to **quickly understand** and are **persuaded** by the presentation.	1.1 conveys precise descriptions of processes, data, and/or findings.
	1.2 describes processes, data, and/or findings so that readers are able to **quickly understand** what was seen, done, and/or found.

Table 6.2. Revised draft of computer science writing ability #1 and evaluative criteria

Graduation-Level Writing Abilities *Students will be able to . . .*	**Criteria for Assessing Writing Abilities** *The text . . .*
1. Create **precise descriptions** of processes, data, and/or findings such that readers are able to **quickly understand** and are persuaded by the presentation.	1.1 is precise in that the writer provides sufficient, unambiguous information to allow the reader **to reproduce** the code/data/analysis OR **to "map out" and visualize the processes** while reading.
	1.2 is **organized hierarchically** to provide context (before moving into details about processes, data, and/or findings) so that the reader is able to **quickly understand** what the writer observed, tested, or found.

As the WEC facilitator, I noted that the criteria did not describe the text's desired effect(s) on readers. Faculty members, guided by those who had participated in the capstone assessment, discussed the goals and purposes of their abilities and criteria. Ultimately, they decided to define the most exigent things readers in the discipline should be able to do and understand while reading descriptive writing in C.S. The textual effects they cared about were "replication," "mapping out" (a reader's mental analogue to actually reproducing a process), and "hierarchical organization." The revised criteria for writing ability #1 (see Table 6.2) included these details and restored the reference to hierarchical organization

5 Tables 6.1 and 6.2 are based on a form licensed under a Creative Commons Attribution-NonCommercial-No Derivatives 4.0 International License. Attribution: Writing-Enriched Curriculum Program, University of Minnesota.

that had emerged earlier. While the iterative nature of this process means there is still room to clarify these criteria, they now invoked C.S. disciplinary values connected to the forms of writing—coding, descriptive summaries, instructions, and academic papers—faculty wanted students to learn.

While C.S. faculty could list characteristics of writing in their discipline and name writing abilities for their majors, the specific meaning and rhetorical features of many terms—like organized, concise, or descriptive—had been made invisible by tacit acquisition and the curse of expertise. Through the WEC process, faculty members realized that they had been assigning but not naming or teaching important disciplinary writing abilities (see Figure 6.1). This was a significant concern because they were committed to fostering a diverse, inclusive major and knew that such implicit expectations created an uneven playing field. Faculty members also realized they had no specific criteria for grading features of writing they expected, such as precise descriptions, an appropriate level of detail, and formatted visuals. As a first step, they revised the project grading criteria to award specific points to such features for all introductory classes.

By releasing the assumption that writing is a transparent, generalizable set of skills, C.S. faculty began to unearth tacit dimensions of their expertise and become more conscious of their expert blind spots. The process of identifying the component parts and effects of writing abilities they value reduced the tacitness of their expectations and helped faculty members connect individual writing abilities to larger disciplinary values and practices. As Faculty Member 3 put it, "It's the constant process of explaining 'in order to . . .' and asking 'Why is that important?' that helped. Bringing that stuff out explicitly has helped me to be much better at talking to students about what we want from writing." Ultimately, like the faculty interviewees in Anson's chapter in this collection, our Computer Science faculty have moved from a cheerful disavowal of writing knowledge to a more nuanced understanding of writing in their discipline and a commitment to making that knowledge visible and available to students.

IMPLICATIONS: WEC AND FACULTY DEVELOPING DISCIPLINARY AWARENESS

I have argued that implementing a WEC initiative increases faculty members' awareness of and attention to their own expertise, expectations, and potential blind spots as they articulate the characteristics, values, conventions, and forms of writing and research in their majors. The collaborative process of drafting and revising specific writing abilities and evaluation criteria—with a WEC facilitator as interlocutor—helps faculty develop a language for talking about writing that can begin to incorporate not only domain content but also rhetorical processes.

WEC facilitators need to help faculty unearth the rhetorical, communicative dimensions of expertise in their disciplines while also helping us to see that to develop expertise is to forget, to change, to think differently, and, therefore, to need to reconstruct and to reexamine one's expertise in order to more effectively share it with others.

Moving through the realizations I outline in the descriptive heuristic above (see Figure 6.1), faculty members develop a more nuanced understanding of their disciplinary writing expectations and, ideally, an increased curiosity about the writing abilities, goals, and forms other faculty value. In the long run, WEC can encourage the spread of more rich, respectful inter- and cross-disciplinary conversations about writing, learning, and research among faculty members. On our campus, new avenues of communication have opened through the process of involving faculty from "cognate" disciplines in capstone assessment readings or just from spontaneous hallway conversations about teaching shared forms, like lab reports or literature reviews.

My experience facilitating WEC and the process of helping faculty come to disciplinary awareness also suggests a few implications for facilitators beginning new WEC initiatives. First, this experience has reinforced how important it is to make space and time for faculty to unpack, discuss, and exemplify what they mean by their terms—especially common terms like "analysis" or "visualize" that seem to have meanings "everybody knows." Through the WEC process, faculty share and develop more specific concrete language for their writing expectations, which is essential and exciting. However, as a number of WAC studies have shown (e.g., Hughes & Miller, 2018; Nowacek, 2009; Schaefer, 2015; Thaiss & Zawacki, 2006), it is quite possible for faculty in the same discipline (and department) to mean different things by the same terms. Continually asking—What does that look like when you see it in writing?—is indispensable, and it is important not to short-circuit the collaborative process of discussion.

While it would be understandably tempting for a department to use language from authorities like accreditation bodies or pre-existing lists of learning objectives, it is the recursive process of articulating, questioning, parsing and revising that unearths tacit dimensions of disciplinary expertise and expectations. Moreover, to help keep a department's writing terms and expectations "live" and relevant, the WEC model includes the iterative process of faculty members' creating, over time, revised editions of their writing plans and returning, triennially, to read real student writing and reconsider their goals and criteria.

Second, it is important for facilitators to gauge how and when to bring in cross-curricular examples that can, through juxtaposition and comparison, help faculty members nuance their understanding of writing in their disciplines. Facilitators can, for instance, use comparative definitions to help faculty clarify their

terms: if faculty members say they want students to "synthesize" sources in their writing, the WEC facilitator might ask: By "synthesis," do you mean citing multiple, relevant sources on the same topic in a concise summary, as in many Psychology literature reviews? Or defining two or three theoretical perspectives that will frame the arguments throughout an essay, as is common in English studies introductions? Or something else entirely? Capstone-level assessment readings can also be an opportunity to see how the same writing abilities may be enacted differently across majors. WEC facilitators and liaisons can decide, for example, to sample writing from two different types of capstones in the same department (e.g., a senior seminar with and without a lab or an art history and a studio art capstone), creating an instant cross-disciplinary reading experience that can yield rich conversation about what "integration of figures" or "source use" means.

Third, coming to disciplinary awareness and developing clear disciplinary writing criteria does not automatically mean that faculty will be able to teach these things to students. Of course, being able to articulate formerly tacit knowledge about disciplinary writing is a crucial step to developing more effective instructional activities. Moreover, as Anderson et al. (2016) found in their large study of NSSE data, providing "clear writing expectations" is one of three high-impact writing practices correlated with deep student learning. But moving from explicit knowledge and expectations to effective writing instruction also requires intentional, supported discussion, iteration, and transformation. Indeed, it strikes me this is an area of WID study that warrants continued investigation. What is the relationship between developing disciplinary awareness and one's beliefs about writing? Between changed beliefs and changed instructional practice? Fortunately, continuing our WEC initiative at Colby provides an ongoing opportunity to consider such questions, while continually learning from the process of helping faculty move beyond "I know it when I see it" to describe writing in their disciplines.

REFERENCES

Adler-Kassner, L., & Majewski, J. (2015). Extending the invitation: Threshold concepts, professional development, and outreach. In L. Adler-Kassner & E. Wardle (Eds.), *Naming what we know: Threshold concepts of writing studies* (pp. 186-202). Utah State University Press.

Anderson, P., Anson, C. M., Gonyea, R. M., & Paine, C. (2016). How to create high-impact writing assignments that enhance learning and development and reinvigorate WAC/WID programs: What almost 72,000 undergraduates taught us. *Across the Disciplines, 13*(4), 1-18. https://doi.org/10.37514/ATD-J.2016.13.4.13

Anson, C. M. (2008). Closed systems and standardized writing tests. *College Composition and Communication, 60*(1), 113-128.

Anson, C. M. (2021). Introduction: WEC and the strength of the commons. In C. M. Anson & P. Flash (Eds.), *Writing-enriched curricula: Models of faculty-driven and departmental transformation.* The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.27514/PER-B.2021.1299.1.3

Anson, C. M. (2021). The new grass roots: Faculty responses to the writing-enriched curriculum. In C. M. Anson & P. Flash (Eds.), *Writing-enriched curricula: Models of faculty-driven and departmental transformation.* The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.27514/PER-B.2021.1299.2.02

Bazerman, C. (1988). *Shaping written knowledge: The genre and activity of the experimental article in science*. University of Wisconsin Press.

Bazerman, C. (1997). Discursively structured activities. *Mind, Culture, and Activity, 4*(4), 296-308.

Beaufort, A. (2007). *College writing and beyond*. Utah State University Press.

Brammer, C., Amare, N., & Sydow Campbell, K. (2008). Culture shock: Teaching writing within interdisciplinary contact zones. *Across the Disciplines, 5*. https://doi.org/10.37514/ATD-J.2008.5.1.04

Bunnell, S. J., & Bernstein, D. L. (2012). Overcoming some threshold concepts in scholarly teaching. *Journal of Faculty Development, 26*(3), 14-18.

Carter, M. (1990). The idea of expertise an exploration of cognitive and social dimensions of writing. *College Composition and Communication, 41*(3), 265-286.

Carter, M. (2003). A process for establishing outcomes-based assessment plans for writing and speaking in the disciplines. *Language and Learning Across the Disciplines, 6*(1), 4-29. https://doi.org/10.37514/LLD-J.2003.6.1.02

Carter, M. (2007). Ways of knowing, doing, and writing in the disciplines. *College Composition and Communication, 58*(3), 385-418.

Donovan, M. S., & Bransford, J. D. (2005). Introduction. In N. R. Council (Ed.), *How students learn: Science in the classroom* (pp. 1-26). The National Academies Press. https://instesre.org/NSFWorkshop/HowStudentsLearn.pdf

Dreyfus, H. (2006). How far is distance learning from education? In E. Seliger & R. P. Crease (Eds.), *The philosophy of expertise* (pp. 196-212). Columbia University Press.

Epley, N., Keysar, B., Van Boven, L., & Gilovich, T. (2004). Perspective taking as egocentric anchoring and adjustment. *Journal of Personality and Social Psychology, 87*(3), 327-339.

Fahnestock, J., & Secor, M. (1991). The rhetoric of literary criticism. In C. Bazerman & J. Paradis (Eds.), *Textual dynamics of the professions: Historical and contemporary studies of writing in professional communities* (pp. 76-96). University of Wisconsin Press.

Flash, P. (2016). From apprised to revised: Faculty in the disciplines change what they never knew they knew. In K. B. Yancey (Ed.), *A rhetoric of reflection*. Utah State University Press.

Flash, P. (2021). Writing-enriched curriculum: A model for making and sustaining change. In C. M. Anson & P. Flash (Eds.), *Writing-enriched curricula: Models of faculty-driven and departmental transformation.* The WAC Clearinghouse; University Press of Colorado. https://doi.org/10.27514/PER-B.2021.1299.2.01

Flower, L., & Hayes, J. R. (1981). A cognitive process theory of writing. *College Composition and Communication, 32*(4), 365-387.

Geisler, C. (1994). *Academic literacy and the nature of expertise: Reading, writing, and knowing in academic philosophy*. Lawrence Erlbaum.

Herrington, A. (1985). Writing in academic settings: A study of the contexts for writing in two college chemical engineering courses. *Research in the Teaching of English, 19*(4), 331-359.

Hinds, P. J. (1999). The curse of expertise: The effects of expertise and debiasing methods on predictions of novice performance. *Journal of Experimental Psychology: Applied, 5*(2), 205-221.

Hughes, E., & Miller, T. (2018). WAC seminar participants as surrogate WAC consultants: Disciplinary faculty developing and deploying WAC expertise. *The WAC Journal, 29*, 7-41. https://doi.org/10.37514/WAC-J.2018.29.1.01

Johns, A. M. (Ed.). (2002). *Genre in the classroom: Multiple perspectives*. Erlbaum.

Kelley, C. M. (1999). Subjective experience as a basis of "objective" judgments: Effects of past experience on judgments of difficulty. In D. Gopher & A. Koriat (Eds.), *Attention and performance* (Vol. 17, pp. 515-536). MIT Press.

MacDonald, S. (1994). *Professional academic writing in the humanities and social sciences* (1st ed.). Southern Illinois University Press.

Malenczyk, R. (2016). *A rhetoric for writing program administrators* (2 ed.) Parlor Press.

Moor, K. S., Jensen-Hart, S., & Hooper, R. I. (2012). Small change, big difference: Heightening BSW faculty awareness to elicit more effective student writing. *Journal of Teaching in Social Work, 32*(1), 62-77. https://doi.org/10.1080/08841233.2012.640601

Nathan, M. J., & Koedinger, K. R. (2000). An investigation of teachers' beliefs of students' algebra development. *Cognition and Instruction, 18*(2), 207-235.

Nathan, M. J., & Petrosino, A. (2003). Expert blind spot among preservice teachers. *American Educational Research Journal, 40*(4), 905-928.

Nickerson, R. S. (1999). How we know—and sometimes misjudge—what others know: Imputing one's own knowledge to others. *Psychological Bulletin, 125*(6), 737-759. https://doi.org/10.1037/0033-2909.125.6.737

Nowacek, R. S. (2009). Why is being interdisciplinary so very hard to do? Thoughts on the perils and promise of interdisciplinary pedagogy. *College Composition and Communication, 60*(3), 493-516.

Rice, J. (2015). Para-expertise, tacit knowledge, and writing problems. *College English, 78*(2), 117-138.

Russell, D. R. (2001). Where do the naturalistic studies of WAC/WID point? In S. H. McLeod, E. Miraglia, M. Soven, & C. Thaiss (Eds.), *WAC for the new millennium: Strategies for continuing writing-across-the-curriculum programs* (pp. 259-298). National Council of Teachers of English.

Russell, D. R. (2002). *Writing in the academic disciplines: A curricular history* (2 ed.). Southern Illinois University Press.

Salem, L., & Jones, P. (2010). Undaunted, self-critical, and resentful: Investigating faculty attitudes toward teaching writing in a large university writing-intensive course program. *WPA: Writing Program Administration, 34*(1), 60-83.

Schaefer, K. L. (2015). "Emphasizing similarity" but not "eliding difference"—exploring sub-disciplinary differences as a way to teach genre flexibly. *The WAC Journal, 26*, 36-55. https://doi.org/10.37514/WAC-J.2015.26.1.03

Sheriff, S., & Harrington, P. (2017). Colby college writing program & Farnham Writers' Center. In B. S. Finer (Ed.), *Writing program architecture: Thirty cases for reference and research*. Utah State University Press.

Thaiss, C., & Zawacki, T. M. (2006). *Engaged writers and dynamic disciplines: Research on the academic writing life*. Heinemann-Boynton/Cook.

Wardle, L., & Scott, J. B. (2015). Defining and developing expertise in a writing and rhetoric department. *Writing Program Administration, 39*(1), 72-93.

Wilder, L. (2012). *Rhetorical strategies and genre conventions in literary studies: Teaching and writing in the disciplines*. Southern Illinois University Press.

Wilder, L., & Wolfe, J. (2009). Sharing the tacit rhetorical knowledge of the literary scholar: The effects of making disciplinary conventions explicit in undergraduate writing about literature courses. *Research in the Teaching of English, 44*(2), 170-209.

Wiles, W. M. (2014). *Prompting discussion: Writing prompts, habits of mind, and the shape of the writing classroom* (Publication Number 1731) [Dissertation, The University of Louisville].

Wolfe, J., Olson, B., & Wilder, L. (2014). Knowing what we know about writing in the disciplines: A new approach to teaching for transfer in FYC. *The WAC Journal, 25*, 42-77. https://doi.org/10.37514/WAC-J.2014.25.1.03

Zhu, W. (2004). Faculty views on the importance of writing, the nature of academic writing, and teaching and responding to writing in the disciplines. *Journal of Second Language Writing, 13*(1), 29-48.