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The Critically Reflective Practicum

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Abstract: A defining feature of honors education is meaningful engagement within and across disciplines, yet significant challenges for creating and sustaining meaningful transdisciplinary research remain. One such challenge involves a nuanced understanding of a discipline, or what educational researchers call "disciplinary literacy." This article introduces critically reflective practicum (CRP) as a pedagogy for developing disciplinary literacy among honors students. CRP acknowledges forms of inquiry as design situations and seeks to simulate instructional scaffolding so that students both experience and reflect on their questioning. Through the practicum, students begin to understand, engage with, and critique the methods and sociocultural standards of one specific modality as well as to identify which disciplines situate themselves within a broader landscape of academic development. While the purpose of this approach is to help students develop a capacity for inquiry, it also helps them unmask the value- and power-laden characteristics of academic discourse so that they can question, challenge, and reconstruct the processes by which knowledge is produced.

Keywords: disciplinary literacy; instructional strategies—methods and materials; geographic information systems (GIS); Schön, Donald Alan, 1930–1997; Colorado College (CO)

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A defining feature of many honors programs and colleges is teaching students how to meaningfully engage within and across disciplines and interdisciplines. Most honors programs and colleges require one or more research-focused courses within their curricula, broadly encourage student involvement in academic research, and require a thesis or capstone course that culminates in an original research or applied project (National Collegiate Honors Council, 2016). Honors programs are also increasing emphasis on

engaging honors students in interdisciplinary courses and experiences that teach students to integrate and apply disciplinary perspectives in the context of complex, multi-dimensional problems (Collins et al., 2021; Shane, 2019). Involvement in research activities is central to the mission of many honors programs as it empowers students to become active producers of new knowledge. (Throughout the rest of this essay, I will use the term "disciplines" to refer to both disciplines and interdisciplines).

Despite this goal, significant challenges to creating and sustaining meaningful undergraduate involvement in academic research remain. Actively producing academic knowledge requires a nuanced understanding of a discipline, or what educational researchers call disciplinary literacy. Becoming literate in a discipline means not only having the capacity to apply methodologies to problems but also grasping the sociocultural contexts that give disciplinary operations their meanings (Angu, 2019; Boughey & McKenna, 2016). Understanding what qualifies as adequate evidence, for instance, depends on the sociocultural expectations of a particular disciplinary community (Lemke, 1990; Wingate & Tribble, 2012). Interdisciplinary literacy is even more difficult to achieve since it is a complex cognitive skill consisting of several subskills, such as the ability to change disciplinary perspectives, to create meaningful connections across disciplines, and to integrate disciplinary insights in order to solve complex problems (Klein, 1990; Repko & Szostak, 2020; Spelt et al., 2009). Beyond synthesis and application, critical educational researchers have argued that disciplinary literacy also requires the ability to interrogate the philosophical and sociocultural values of the disciplines (Moje, 2007, p. 200; Stoller, 2017). Achievement of this goal requires that students are exposed to how disciplines are mediated by power relations and are given opportunities to question, challenge, and reconstruct the processes by which academic knowledge is produced.

This article introduces a pedagogical method I call the critically reflective practicum (CRP), which is intended to develop honors students' critical disciplinary literacy. The CRP is a way of situating honors students as investigators of a discipline so that they can understand, engage, and critique its methods, sociocultural values, and philosophical beliefs; it simulates disciplinary and interdisciplinary knowledge construction so that students both experience and reflect on inquiry.

The CRP is built on traditional approaches to disciplinary literacy in that it suggests that students' success within a discipline depends on their capacity to apply the technical operations of a discipline and to understand those operations in a specific discipline's sociocultural context. However, it extends this

traditional approach by incorporating the insights of critical theory and pedagogy directly into the learning process by engaging students in direct critiques of disciplinary assumptions and values. This critical approach engages students in direct interrogation of epistemic assumptions and cultural values. This process has a threefold effect: it empowers students to more deeply grasp the sociocultural and philosophical contexts that shape the practical operations of the discipline; it highlights the affordances and limitations of various disciplinary approaches, including the way that power shapes intellectual projects and priorities; and it also situates disciplines as sets of evolving practices that can be harnessed and revised in pursuit of students' emerging questions.

The critically reflective practicum is a method that can be applied to any discipline, and it is particularly well suited to an undergraduate honors context. Although honors students are typically academically prepared for college, they are rarely given explicit opportunities to reflect on their process of education (Bleicher, 2020, pp. 94–95). Allowing students to directly question the purposes, values, and functions of disciplines that shape all college curricula invites them to question not only what they are learning in the classroom but also why and how they are learning in a particular way. A major challenge and opportunity for honors programs is demonstrating to students why all disciplines generate legitimate and meaningful forms of knowledge and preparing them to draw connections across fields of study (Carrell et al., 2020). A CRP not only shows students how disciplines operate, including their affordances and limitations, but also situates them in the wider landscape of academic knowledge production.

Lastly, the CRP is part of a long tradition of engaged learning in honors (Braid & Long, 2010; Long, 2014; Machonis, 2008). It bears a close family resemblance to an approach suggested by Nadine Dolby's critical experiential approach that involves students in direct experiences of and critical reflection on community-based problems (Dolby, 2017). While critical experiential education deploys critically reflective techniques to change the way honors students relate to particular kinds of community-based issues, the CRP uses a similar framework to change the way they relate to the disciplines themselves. In other words, the CRP embeds a key learning goal of most honors programs and colleges—building disciplinary literacy—within a scaffolded, critically reflective, and experiential learning process.

My experiences teaching critically reflective practica demonstrate that deeply transformative learning is likely to occur as students begin to understand themselves as emerging intellectuals who are capable of making unique contributions to the projects of the disciplines.

BACKGROUND

My interest in critical disciplinary literacy began in the context of the University Honors Program at North Carolina State University, where I was Assistant and Associate Director. At the time I was involved in the UHP at NC State (2010–2016), the program served approximately 1,000 students across all departments and divisions. The mission of the program was

> to provide a transformative learning experience which empowers students to critically engage meaningful problems in the world. Students in the program directly participate in the knowledge-building and creative activities of the NC State faculty and are encouraged and enabled to craft for themselves a unique undergraduate education that draws on the full range of opportunities that exist at a research-driven, land-grant university such as NC State. (NC State University, 2020)

The honors program supported this goal by increasing students' disciplinary literacy in the classroom so that they were prepared to understand and involve themselves in research opportunities across the university.

My first iteration of the CRP was in the context of a first-year honors seminar I titled "Deconstructing the Disciplines." Students in the class were situated as philosophical anthropologists and were asked to investigate the nature of disciplines across three major domains: the natural sciences, social sciences, and humanities. Throughout the class, students were asked to become participant observers, interviewers, and ethnographers of various research activities taking place across the university and bring their findings to class, where we collectively asked sociocultural and philosophical questions about what they observed.

I realized quickly that the goals of the course were too large for a single introductory course. I retooled the class as an investigation of a single discipline (my own). I developed a problem-based class where students worked and thought alongside me as we investigated a unified question through a series of scaffolded exercises.

I left NC State for a stand-alone honors college, Colorado College (CC), which is a highly selective, small, private, liberal arts college serving 2,000 high-achieving students. At CC, I was tasked with leading a redesign of the first-year curriculum, and based on my critically reflective practicum, the First-Year Program (FYP) at CC is now a set of problem-driven courses that use the CRP as its approach Some of our course topics have included "Slow

Food in a Fast Food Nation," "Markets and Morality," "Monsters, Robots, and Cyborgs," and "Sustainability in the Anthropocene."

In addition to addressing their own unique problem, courses are grouped into thematic clusters. These clusters are required to have several "convergence" days in which the students and faculty in several classes engage in a range of activities emphasizing disciplinary conflicts and differences, e.g., case studies, inquiry-based work, interviews, and participant-observation. These activities provide a platform on which cross-disciplinary dialogue and critical reflection can be developed.

THE CRITICALLY REFLECTIVE PRACTICUM: GENERAL CHARACTERISTICS

The critically reflective practicum, which can be used across any discipline, starts with the claim that disciplinary literacy cannot be learned exclusively through didactic instruction, such as a classroom, or through a non-reflective experience like an internship or position in a research lab. The former fails to give academic concepts an embodied and experiential basis. The latter often lacks structured reflective practices, thus leading to low levels of critical engagement (Waks, 2001, p. 42).

A CRP draws the assets of these two approaches together through an inverted learning process: it is rooted in direct, hands-on inquiry onto which critical reflection and interrogation are layered. The practicum is, in effect, an offline set of inquiry-driven experiences that simulate and scaffold research for novices, allowing them opportunities to interrogate the technical choices, sociocultural meanings, and power relationships within the processes of inquiry.

This model is based on Donald Schön's research into how experts learn and, specifically, his process of reciprocal reflection. In this process, novices directly experience inquiry, and experts think alongside novices through a "ladder" of reflection until novices develop expertise (Schön, 1987, pp. 114–16). The CRP takes this process as its basis but pays specific attention to the operations of power and of sociocultural and philosophical assumptions of the disciplines during the process of reflection.

The Generic Traits of Inquiry

The starting assumption of Schön's work (1987) and of a CRP is that all disciplinary and interdisciplinary inquiry follows a generalized process

of "design and discovery" (Schön, 1983). The critical differences between disciplines occur within their technical operations, methods of evaluation, and philosophical and cultural assumptions while the overarching process of inquiry remains the same.

Schön (1983) described all processes of inquiry as design situations in which an inquirer creates an emergent framework of meaning inside an indeterminate situation that ultimately resolves the situation and yields new knowledge and meaning. This process is represented by Demian Newman's *Design Squiggle* (Newman, 2022). See Figure 1.

The design process works this way. An expert begins by positing an initial frame of meaning, e.g., hypothesis, based on an initial, largely intuitive grip of an ill-defined, messy situation. Stated another way, they have a hunch about something. The expert then moves through a series of "frame experiments" in which they interact with the materials of the situation (Schön, 1983, p. 269). We can think of frame experiments as any number of physical, technological, or logical tests that try to tame the unknown situation of inquiry. For instance, scientists might look for correlations and poets might search for words with the right kind of cadence. What the expert is doing during this process of frame experimentation is trying to create overall coherence in an unknown situation through the prototyping of various meaning-establishing moves. During this process, the expert makes tentative operational moves and the material situation "talks back," constraining and shaping further moves or even occasionally negating the entire initial frame of meaning (Schön, 1983, p. 132). Stated more directly, during a process of inquiry our hunches fail in small and large ways, sometimes leading us down new paths and occasionally causing us to go back to the drawing board entirely. As the expert continues to engage in frame experimentation, a pattern of coherence eventually becomes

Figure 1. The Design Squiggle

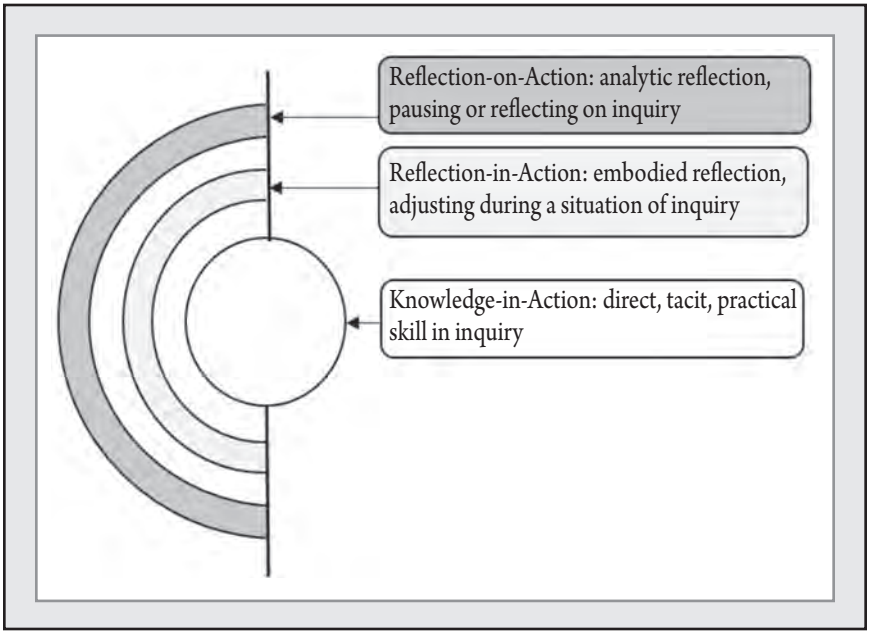
manifest, involving fewer unknowns as the inquiry inches closer to resolution. Eventually, the inquiry is resolved.

During design processes, experts engage in three forms of activity in the ladder of reflection that occurs throughout a process of inquiry: knowledge-in-action, reflection-in-action, and reflection-on-action (see Figure 2).

Knowledge-in-Action

The ladder of reflection is rooted in what Schön calls "reflection-in-action," during which experts primarily draw on direct, tacit knowledge to do their work (Schön, 1987, pp. 114–16). Knowledge-in-action can be imagined through the metaphor of sports. Soccer players describe not needing to look to see where the ball is in relation to their feet and legs, and expert skiers often talk about how they "read" the slopes (Schilling, 2008, p. 53). Athletes at their peak do not have to metacognitively engage their choices but instead simply operate as informed actors or agents by drawing on their tacit knowledge of emerging situations of inquiry. The same is true for disciplinary experts. Expert anthropologists conducting participant-observations and philosophers making arguments do not spend significant time wondering what counts as effective data in the context of an inquiry. They have developed an

Figure 2. My Diagram of Schön's Ladder of Reflective Practice



intuitive grip on the process that allows them to collect and deploy information on the fly without having to stop and metacognize their choices.

Reflection-in-Action

The second level of the ladder of reflection is what Schön (1987) calls reflection-in-action. Experts relying on knowledge-in-action as the basis for their action experience roadblocks in practice. For example, their lab experiment fails, or they are presented with counterevidence that undermines their initial frame of meaning. In the face of these disruptions, experts adapt to the design situations through making embodied adjustments directly in practice. Like knowledge-in-action, reflection-in-action requires no metacognition because experts have developed a wide range of what Hans Joas calls "body schema" that allow them to adjust directly to unknowns without removing themselves from the design situation to reflect analytically (Joas, 1997, pp. 167–84). Reflection-in-action is tacit, embodied reflection that causes a felt adjustment during an emerging design process.

Reflection-on-Action

The third rung of the ladder is what Schön (1987) calls reflection-on-action. Like reflection-in-action, this form of activity happens when an expert runs up against a roadblock in practice. The difference is that this time the roadblock is so significant that it requires metacognitive reflection on past and future action. This form of analytic reflection is the psychological and often physical removal of oneself from an immersive design situation to actively reflect on the situation. This form of activity is much less common for experts but is extremely common for novices who are still developing practical fluencies with a form of inquiry.

The Ladder of Critical Reflection

For Schön (1987), the development of expertise is, in essence, the development of the capacity for knowledge-in-action and reflection-in-action. Since novices do not possess this capacity and it cannot be developed didactically, they must observe and directly experience the kinds of inquiries undertaken by experts, and they must reflect on what they see and experience. Therefore, the first step in building a CRP is designing a set of scaffolded experiences that allow students to observe (through modeling) and then directly experience increasingly immersive forms of inquiry. Each of these phases—from

highly simulated to open-ended—involves an expert who thinks alongside a novice not only to model inquiry but also to respond to questions they may have about the process and to provoke questions they might not even know they should ask (reflection-on-action).

What makes a reflective practicum critical is that it moves beyond reflecting exclusively on the operational techniques of the discipline and engages students in an interrogation of the sociopolitical and philosophical values that shape the aims, structures, methods, and assumptions of the discipline being taught. For example, in addition to helping a novice reflect on how to develop a research question, we have to reflect on why a research question is of value at all.

Facilitating the Ladder of Critical Reflection

Facilitating the ladder of critical reflection is not easy, particularly for faculty who may have no training in inquiry-based or other experiential pedagogies, because it presents two kinds of challenges.

The first is the challenge posed by Schön's model (1987) itself. Methodological expertise is generally held as tacit knowledge, meaning that it is nonverbal, felt, and embodied. A challenge is posed by the lack of conscious awareness of the faculty member and the inherent communication gap between expert and novice.

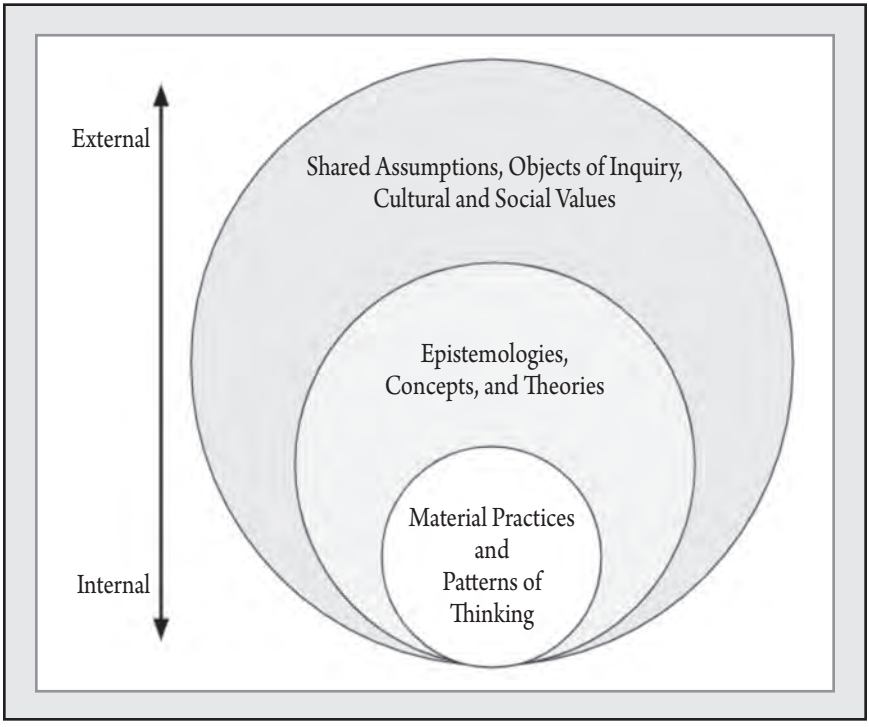
A more acute problem is that many academics are unaware of how their disciplines and practices are shaped by sociopolitical forces, so it is often difficult for them to identify the specific kinds of questions they need to discuss with students (Frodeman, 2013, p. 18). To address this challenge, I have developed a heuristic to help faculty identify the contexts of disciplinary practice that they should interrogate in a CRP (see Figure 3). This heuristic can be used in both the preparation and execution of a CRP: in the former, it aids teachers in identifying gaps in their own understanding about the sociopolitical contexts of their discipline, giving them avenues for exploration; in the latter, it can ensure that the entire scope of a discipline is critically interrogated and, in some cases, given to students for discussion.

In developing this framework, I have adopted the basic distinction accepted by philosophers of science between external and internal domains of inquiry (illustrated as a spectrum on the left side of the diagram). The external domain represents those contexts that influence the overarching direction of disciplinary inquiry, such as influence from public and disciplinary stakeholders. The internal domain, which is traditionally considered the

core of disciplinary practice, represents the processes that provide grounds for the conclusions of a discipline. I have represented the external/internal domains as a spectrum rather than a binary because they are interrelated and often nested within actual practice.

What makes the practicum critical is how students are involved not only in a description of these domains but also an interrogation of them, revealing how each component is shaped by sociopolitical forces. A CRP must engage in at least three kinds of disciplinary interrogations. The first comprises questions of why we know what we know. In other words, we need to ask questions about the critical histories that led a discipline to hold particular assumptions and why the disciplinary community considers these assumptions to be valid and valuable. Second, we need to interrogate how we know what we know. For example, we need to ask questions about the kinds of cultural, social, political, and economic agendas at work in a disciplinary matrix as well as its limitations and constraints. Lastly, we need to interrogate the relationship between power and knowledge. We need to engage students in discussions about why certain elements of a discipline, e.g., theories, epistemologies, and

Figure 3. The Critical Contexts of Disciplinary Practice



methods, are authorized while others are silenced. We also need to interrogate how disciplines, as cultures of practice, reproduce larger systems of class, race, cultural, and gender oppression.

Because of the richly contextual nature of a CRP, there can be no final list of questions that should be covered, nor is there a template for how, when, and where these kinds of interrogations should be embedded. What we can say is that interrogation of these disciplinary contexts must be at work and engaged throughout the full arc of the practicum.

THE CRITICALLY REFLECTIVE PRACTICUM: A CASE STUDY

When I joined NC State, the first honors seminar that I taught was a first-year seminar titled "The Life of the Mind." Like many introductory seminars of its kind in honors programs across the U.S., it was designed to introduce the relationship between education, the self, and society. I taught the course didactically through readings about the university and required students to make connections with honors faculty and other academic partners across the college. In short, I treated the life of the mind as academic content rather than a point of pedagogical contact with knowledge-producing activities in the university.

Subsequently, I reformulated the seminar into a CRP described below. While the seminar still includes traditional elements such as reading, writing, and discussion, it is designed as an inquiry into education using the methods of my discipline, philosophy of education. Throughout the course, students work alongside the teacher to formulate an answer to the question of what it means to be educated. Along the way, we experience and analyze the methods and assumptions of philosophy; gain a sense of its affordances, limitations, and biases; and situate the discipline within the wider landscape of academic knowledge production.

Phase 1: Conceptualizing the Critically Reflective Practicum

The practicum begins by introducing the approach of the course. We talk about learning goals with specific attention to how it is a problem-driven course, and we talk about the course as a CRP that will involve direct experiences of inquiry and provide opportunities for critical reflection on those experiences. We also read texts that introduce the methods of philosophy of

education. Lastly, I introduce the centering question of the course—what it means to be educated—and discuss how we are going to work collaboratively to formulate an answer to this question.

Figure 4. Comparison of Traditional and Montessori Classrooms

Traditional Classroom

Montessori Classroom

This initial phase is a process of reflection-on-action designed to calibrate expectations and to introduce the risk-taking, ambiguity, and potential failure that will occur during our shared inquiry. This phase is important because many honors students are not used to the kind of anxiety that can be produced by the messiness of disciplinary inquiry in the context of a classroom (Wintrol & Jerinic, 2013, p. 49; Zubizarreta, 2011, p. 16).

Phase 2: Situating the Inquirer

Our first major exercise is also part of reflection-on-action: situating ourselves as inquirers through an exercise I call a "critical educational autobiography." The goal of this exercise is to draw connections between the social and cultural positionality of researchers and their approach to inquiry. The exercise has the added benefit of creating a space where we make ourselves intellectually and emotionally vulnerable as a classroom community, which is important for establishing the conditions for intellectual risk-taking that will happen throughout the class (Williams, 2020). This exercise involves four parts (in all of which I participate fully):

1. Students create a basic "Road Map"—a life timeline—that illustrates their most significant prior learning experiences, including the individuals and institutions that have most shaped their development. I ask them to begin with the earliest events and/or people that they can recall and then map out their years as a learner in and outside of school, with special attention to the college years.
2. They create narrative descriptions of three educationally significant events from their Road Map—for example, if they were influenced by a particular interaction, event, or assignment. I ask them to describe the context of the event, what happened, and why it was so significant.
3. They reflect on their Road Map and descriptions, thinking about how their present beliefs about education are rooted in the experiences they identified. In investigating their background, they are instructed also to think about the various identity positions they occupy and how their experiences and ideas about education are embedded in a sociopolitical context. For example, did their gender, religious affiliation, political commitments, ethnicity, and/or social class somehow influence their ideas about education?

4. Finally, they create a synthesis and reflection that tie these experiences to a particular philosophical stance on education by answering the question "What does it mean to be educated, and how is your view shaped by your positionality?"

Students generally assume that this is a "get to know you" activity at the start of the course, but we return to it at the end of the course to illustrate the idea that a researcher's positionality matters.

Phase 3: Reading a Photo

The next phase of the practicum moves into knowledge-in-action and reflection-in-action to directly experience philosophical inquiry through a guided simulation of the practice of philosophy of education. The goal is for them, as novices, to begin to gain a sense of both the object of inquiry in philosophy of education—i.e., the beliefs and concepts driving human behaviors, choices, and actions—and the methods through which philosophers identify and interrogate those beliefs.

I accomplish this goal through a tightly framed simulation in which we collectively "read" two educational spaces. I have the whole class analyze and interpret two different scenes: a traditional and a Montessori classroom (see Figure 4). We examine each scene independently in a set of questions and then contrast our reading of each scene against the other. Finally, we will collectively develop a tentative answer to the question of what it means to be educated in each of these environments.

During this experience, my job is to engage in "reciprocal reflection" (Schön, 1987, p. 101) within this simulated experience of philosophical inquiry. I move alongside the students as I start to ask philosophical questions about the space, in much the way I taught my children to ride their bicycles. I want to hold them steady through some predetermined questions and slowly allow them small opportunities to go off-script to develop an embodied philosophical intuition. Throughout the experience, I take them through a pre-designed ladder of critical questions (described below), and I map their responses on the whiteboard.

While the process has frequent moments of improvisation both for the students and the teacher, the process is scaffolded to illustrate the layers of reading that occur within the context of this kind of inquiry. The reading begins with descriptive questions as I ask students to identify aspects of the physical space. The purpose is to get them to notice details that might have

philosophical significance. The second round of questions builds on the first but focuses on the sociopolitical aspects of the scene, helping them more closely observe the behaviors and relationships taking place and the potential meanings of those interactions. These are questions such as the following:

- What is happening in the room?
- How are people using the space?
- How are they interacting with one another?
- How is the space directing or influencing the people?
- What are the power dynamics in the space?

Finally, we collectively move toward more directly philosophical questions that identify and analyze the beliefs and assumptions underpinning the ecosystem of practice in the space based on traditional philosophical categories. We also begin to think about alternatives to these beliefs. We might ask, for example,

- Why is this space designed the way that it is?
- Why are people interacting with each other in this specific way?
- What are the philosophical beliefs (e.g., epistemic, ontological, metaphysical, political, and ethical) that are influencing this space and these interactions? What are alternative possibilities?

After listing our answers to these questions (and others that inevitably arise), we compare the two scenes before answering our motivating question of what it means to be educated in each of these environments.

The exercise is not designed to have students simply respond to questions; it is an opportunity for us to think alongside one another and engage the ladder of reflection through knowledge-in-action and reflection-in-action. This goal means that I participate actively by positioning myself as a master learner, trying to open up their philosophical instincts. I often say things like "As a philosopher, I am drawn to X. I don't exactly know why, but it caught my attention. Do you notice anything else that feels significant?" These kinds of questions achieve two goals. First, they emphasize the fuzziness of the process and how I might try on particular frames as I search for a possible meaning. I am also transparent about this aspect of inquiry and directly explain to them that what I am doing is looking for patterns of meaning in search of a coherent interpretation. Second, using the word "feeling" in describing my process

demonstrates the tacit nature of the process and makes it acceptable for the students to begin to trust their emerging philosophical instincts. I also elevate and highlight their instincts by saying something like "X noticed an important detail. Why might that be philosophically significant?" Part of my role is to help them sort fruitful instincts from those that might not be as philosophically rich. As they develop a grip on the process of philosophical inquiry, we layer more critical reflexivity.

At the end of this exercise, we engage in reflection-on-action with specific attention to critical questions about the process. For instance, we refer back to our "critical educational autobiography" to discuss how our educational positionality and experiences shaped the process of philosophical inquiry, including the kinds of things that we pay attention to and our interpretation of phenomena. For instance, students who were schooled in a traditional environment are often skeptical about the Montessori classroom, which they think has "no structure." We talk about how our experiences shape our philosophical assumptions about motivation or human attention and how those assumptions then influence our interpretation of the situation.

Phase 3: Reading a Room

The third phase of the practicum uses the same exercise as before, but the class works in small teams of three or four without the oversight of the instructor. Returning to the metaphor of learning to ride a bike, I design this second exercise to repeat and reinforce earlier lessons by giving them more opportunity to try out the process on their own. In this experience, they ride further, they test their muscles and instincts, and then we return to talk about what happened.

Instead of viewing a picture, the teams select a site on campus from a list that I have pre-selected based on what I consider their philosophical significance. I typically give students the option of visiting various traditional academic spaces—e.g., a large classroom lecture hall with 150+ students during a class, the writing center, or undergraduate thesis carrels in the basement of the library—as well as co-curricular or so-called "non-academic" spaces like a residence hall on a weekend or a formal campus-wide event such as a football tailgate. Each site can be selected by only one team. The class, taken as a whole, must investigate both academic and non-academic spaces.

Teams are instructed to take approximately ninety minutes to observe and annotate the environment based on a list of descriptive, sociopolitical,

and philosophical questions I develop and on others they generate during the inquiry. They then develop short, informal presentations to share their answers to all three layers of questions and to respond again to the motivating question of what it means to be educated based on our interpretation of a specific space. Teams are welcome to invite me to participate in their process of reading the space, and often they call me to do a site visit when they get stuck.

The following day, we return to engage in reflection-on-action about their process of inquiry. I ask the groups to make short presentations about their findings, but I ask the audience not to focus on their findings but to imagine themselves as trying to think alongside the presenting team. We are all there not to evaluate their findings but to help them think through the process of their investigation, posing questions about how they read the space, where their instincts led them, where they ran dry, and how the overall experience felt to them.

These presentations reveal different types of concerns that map onto the various critical contexts of the discipline (see Figure 3). For example, students often talk about difficulties they had distinguishing between significant and insignificant details. This concern maps onto the patterns of thinking of the discipline, and we use it as an opportunity to reflect on the different dimensions that philosophers apply to a determination and why their decision is connected to particular sociocultural assumptions. Similarly, the class often asks questions about the validity of the process, such as whether the space was designed from an intentional philosophical standpoint, thus allowing us to discuss the shared assumptions of the discipline and the rationale for the assumptions. In this case, we discuss why philosophers might assume that beliefs shaping behaviors are significant whether or not people are consciously aware of them.

Phase 4: Interacting with a Landscape

The fourth phase of the practicum is like the previous two but moves further away from a tightly framed exercise to an open-ended, immersive simulation. In this phase, students use the Geographic Information System (GIS) lab to conduct an interactive reading of the entire campus. At this point, they have started to develop their basic philosophical instincts and have the confidence necessary to carry out this project.

A GIS lab uses geospatial technologies to collect, manipulate, analyze, and model spatially referenced data. Because the GIS lab allows the class to

interact with (rather than just observe) data, this phase simulates many of the core dimensions of philosophical thinking, including the identification of philosophically significant data, the capacity to scope an inquiry from a local instance to an overarching trend, and the ability to see philosophical relationships between disparate elements of a situation. Because this phase requires both technical training and data gathering, the lab experience takes place over several weeks.

After the class is trained how to use the lab, they work together as a class to respond to the same motivating question of what it means to be educated. This time, rather than looking at a pre-designated space, they use the lab to interact with the entire campus. I reiterate that in completing this assignment, they must consider that, philosophically, education is a much broader concept than what happens inside the classroom. Everything that people do—where they study, their social choices, their friend groups, how and where they travel around campus—is part of the ecology of their education.

The class works with one another and the GIS team to identify, gather, and visualize data sets that they believe may be significant in answering this question. Throughout the activity, I monitor their choices of data and pose questions that might open up new possibilities for inquiry; however, unlike the previous two phases, I never suggest data sets. The data sets they select vary wildly year-to-year but include the spaces designated for social activities or campus rituals; space allocation between academic departments and administrative units; mapping of the number and types of learning spaces (e.g., lecture halls vs. seminar rooms vs. labs); mapping of campus activity at different points of time (morning, noon, night, weekday, weekend); the shifting geographic boundaries of the campus over a fifty-year time frame; real estate and other socioeconomic data points in the areas surrounding campus; and policing patterns and crime statistics. At my insistence, we always examine the college's classification systems used to organize these data sets, including employee classifications, spatial classifications, academic divisions and departments, and class type designations, e.g., field study courses vs. lecture courses. In the end, the class gives a group presentation responding to the motivating question that walks us through the layers of questions—descriptive, sociopolitical, philosophical—and concludes in an assessment of what the college's overall design implies about what it means to be educated.

As with the previous phases, we spend a full class period to present findings and reflect on the action that took place in this phase. Like phases 2 and 3, many new insights about the various critical contexts of disciplinary practice

(Figure 3) surface based on new, concrete experiences, and we use these experiences as a springboard to interrogate the values and cultural assumptions of philosophy.

New to this phase are questions about the interrelationship between disciplines and the potential limitations of disciplines in asking and answering the motivating question; students explore their experience of using the GIS lab to do philosophy. Because many of these questions are beyond the scope of my training, I ask the GIS lab manager to join me in facilitating this reflection on the experience. For instance, students frequently ask questions about how philosophy uses (or ignores) empirical data. They also ask questions about the philosophical processes that allow GIS to determine significant data sets. This discussion almost always raises questions about how philosophers and GIS experts are trained and the limitations of those training processes.

Phase 5: Critical Reflection-on-Action

In the final phase, we move to a process of critical reflection-on-action where we leverage our experiences throughout the course to interrogate the discipline itself. Students are asked to review their field notes from the entire course the night before, to note themes and questions, and to bring their notes to class.

Like the previous phase, I invite colleagues representing alternative frameworks for educational inquiry (e.g., educational psychology, sociology of education, and educational history) to join this class meeting to enrich the dialogue. I also include a colleague from philosophy who can represent a counterpoint to my approach as a pragmatist. All are briefed on the course and different exercises in the class.

The class proceeds as a traditional seminar discussion with the content being an interrogation of the discipline of philosophy itself. We subject our experience to three sets of critical questions.

- We ask questions about why we know what we know: in other words, why this framework for thinking might be valid and valuable and in what ways might it be problematic or spurious. We also ask questions about the specific cultural, social, political, and economic agendas at work in the project of philosophy of education.
- We also ask questions about how we know what we know. This set of questions includes investigating the methodological and technological

processes that produce knowledge and also the epistemic assumptions that are involved in this specific form of knowing: for example, what epistemic assumptions philosophy depends on to do its work; what we think about the validity of those assumptions; and the limitations or constraints of this particular way of thinking.

- Finally, we ask questions about the relationship between power and knowledge. Students are involved in asking questions about the ways the discipline actively shapes the objects of inquiry in these exercises. For this portion of the interrogation, we refer back to our critical educational autobiographies. We ask questions about how certain epistemic frameworks and disciplinary concepts are authorized while others are silenced and how the discipline, as a culture of practice, reproduces larger systems of class, race, culture, and gender oppression. We also ask substantial questions about our positionality as researchers: for example, why I chose these spaces for investigation; what might have been different; what our relationship is to the actual humans in these spaces; and what inquiry should do for them, if anything.

CONCLUSION

The CRP is one pedagogical method for developing undergraduate honors students' critical disciplinary literacy that can be applied to any discipline. The CRP treats discipline and interdisciplinary inquiry as design situations and seeks to simulate knowledge construction so that students both experience and reflect on disciplinary and interdisciplinary activity. Through the practicum, they begin to understand, engage, and critique the methods and sociocultural values of one specific mode of inquiry. Students also come to understand that disciplines are situated within a wider landscape of academic knowledge production. The purpose of this approach is not only to help them develop the capacity for disciplinary inquiry but also to unmask the value- and power-loaded nature of the discipline so that they can question, challenge, and reconstruct the processes by which academic knowledge is produced.

The CRP is particularly well suited to an undergraduate honors context. It refocuses a key learning goal of most honors programs and colleges—building disciplinary literacy—as a scaffolded, reflective, and experiential learning process, drawing on the long history of engaged learning in honors (Braid & Long, 2010; Long, 2014; Machonis, 2008). This process of learning the disciplines is also intentionally critical in nature, giving students not simply the

opportunity to rehearse the techniques of knowledge production but inviting them to directly question the purposes, values, and functions of the disciplinary and interdisciplinary operations they are being asked to apply in practice. This process of interrogation also prepares them for one of the most elusive outcomes for many honors programs: to draw meaningful connections across fields of study (Black, 2011, p. 203).

In addition to supporting core disciplinary literacy outcomes, a CRP meets another substantive goal of honors programs: empowering students to understand themselves as legitimate and engaged partners in learning alongside faculty. Through the experience, students begin to see themselves as valid contributors to the disciplines, which they begin to understand as frameworks for practice that can be harnessed in the pursuit of their own emerging questions. In other words, the practicum shifts not only what students know but also their emerging relationship to knowledge.

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