

Professional Formation in the Gross Anatomy Lab and Narrative Medicine: An Exploration

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Abstract

As an early and important experience in medical education, dissection in the gross anatomy lab is a locus of professional formation. Because students often think of their professional development in evolving, narrative terms, the authors propose that close attention to these narratives might add to understanding of professional formation in progress. They solicited written reflections from students, to explore ways that both the content and form of written reflections might illuminate themes relevant to professional formation, and to describe some elements of professional formation

in the context of one institution (Baylor College of Medicine, Houston, Texas). Seventeen students participated in writing sessions and wrote in response to an oral interview transcript and to a poem. Using a reading approach that grew out of the narrative medicine movement, the authors collaboratively engaged the content and form of these written reflections.

Students' collection of written reflections was a rich source of information about their experiences in the anatomy lab. Through both content (e.g., expressions of gratitude, transitions, self-awareness)

and form (e.g., from less detailed writing to literary playfulness), their writings gave a glimpse into the tensions, disappointments, and satisfactions of the practice of gross anatomy.

This project models one way that educators can read and respond to the reflective writing that students generate. The authors go on to propose ways that interactions around reflective writing can be part of a broader goal of forming narrative-minded physicians, who become increasingly self- and other-aware as they progress in their education and practice.

The gross anatomy lab is an early and important site of professional formation.¹⁻⁶ We believe that some of the most interesting aspects of professional formation, including the formation that occurs during the anatomy course, can only be expressed through narrative—that is, through stories that deal either implicitly or explicitly with who the teller is, and who he or she is becoming. It is not always easy for educators to see this process in action, and asking a student about the ways he or she is moved to act on account of his or her assumptions about mortality, corporeality, healing, and physicianhood may only elicit a blank stare. But when we read how that same student situates his or her experience within a narrative—allowing us to stand amidst the sights and smells of the anatomy lab, and giving us a chance to observe the diction, use of metaphor, form, and motion of this reflection—some of these deeper aspects

of professional formation may come into relief.

To learn more about the ways the anatomy lab relates to professional formation at Baylor College of Medicine in Houston, Texas, we used a qualitative approach that grew out of the narrative medicine movement. We looked at both the content and form of short reflective writings about the anatomy lab to explore ways that these elements of written reflections might illuminate themes relevant to professional formation, and to describe some elements of professional formation in the context of this institution.

Here, we hope to share our observations while avoiding, to the extent possible, an instrumental approach (i.e., an approach focused on manipulating students to achieve certain behaviors). An instrumental mind-set would have us ask, how do we influence students using this new, more implicit knowledge of their experience gathered from reflective writing? In contrast, we focus on ways of encouraging students to produce more specific and nuanced writing, with the goal of helping them become even more aware of the formation they are undergoing. With this focus, educators might ask, how can this student engage his or her experience even more deeply

and attentively? Toward this end, in our reading, we stratified the students' writings into three categories—"matter-of-fact," "introspective," or "free/playful." By doing so, we gained a fuller understanding of students' processes and experiences, thus helping them to progress to fuller modes of expression. Our hope is that other educators may learn from our process.

Guiding Theory

Two spheres of guiding theory inform our frame of reference: professional formation (also known as professional identity formation) and narrative medicine. Professional formation refers to the dynamic process of growth in personal, professional, and moral dimensions—a process that often includes mentorship, decision making, and reflection.⁷⁻⁹ "Professional formation" is sometimes set in contrast to "professionalism," which tends to emphasize a static set of concrete behaviors or competencies. Narrative medicine is concerned, among other things, with the ways that attention to narratives can deepen understanding between those in the community of practitioners and patients.

Jack Coulehan¹⁰ connects narrative practice and professional formation. He writes,

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“Becoming a physician involves *witnessing*, and not just behaving.”¹⁰ The complexity of this task, and its attendant necessity to “enter into a certain kind of narrative and make it one’s own,”¹⁰ requires a set of narrative skills developed through practice. Similarly, Rita Charon and Nellie Hermann¹¹ claim that practicing authentic, nuanced, and detail-oriented reflection can be an important step in shaping the capabilities of medical students to appraise challenging clinical scenarios and act well in response to their difficulty and ambiguity.

Others emphasize the importance of looking outside of medicine for the resources and narratives necessary to professional formation. Nathan Carlin et al⁹ identify three traits of spiritual formation (mentorship, personal and communal spiritual practice, and public ritual) that may translate into three core areas (mentorship, reflective practice—including reflective writing—and public ritual) integral to professional formation. And Warren Kinghorn¹² writes, “Medical education is at root a process of moral formation, in which promising but naïve clinicians who lack the ability to discern the good in particular clinical situations . . . are formed, through hard study and iterative practice under the guidance of competent teachers, to be clinicians capable of consistently knowing and doing the good.”

Both of these theories can help educators better appreciate how experiences such as dissection and learning in the gross anatomy lab form new students’ professional identities. The understanding that physicians, and physicians in training, gain through this process pushes beyond the realms of core competency and toward the more uncertain territories of unstructured and messy human interaction—the stuff of the clinical encounter.

Context

Students at Baylor College of Medicine meet in the anatomy lab for two hours weekly throughout their first year of medical school. In addition to the formal curriculum, the school has traditions surrounding the lab, many of which correspond to Carlin and colleagues’⁹ list of core elements of professional formation (mentorship, reflection, and public ritual). Before the first session, several hours are devoted to lectures, poetry readings, and informal talks amongst students and educators that frame the experience. Once

in the lab, students are encouraged to refer to their living professors by their first names, elevating the donors themselves to the place of teacher. The lab coordinators and second-year students who return to teach study sessions model behaviors within the lab that help maintain a culture of respectful engagement. Students are encouraged to write in a personal diary about their experiences, especially during traditionally emotionally intense dissections, such as the hand.

At the end of the course, following the head and neck portion of the curriculum, students place a white rose on the metal lid of their tanks as a sign of respect and a final tribute to their donor. A few weeks later, students host a donor honor ceremony (attended by students and faculty members) that involves music, speeches, and videos reflecting on the experience and expressing students’ gratitude for what has taken place.

Project Description

To more fully appreciate students’ experiences and hone our abilities as educators, we formed groups from student volunteers and asked them to write short responses to prompts as described below. Specifically, from February to May 2014, four classes of medical students at Baylor College of Medicine in Houston, Texas (graduation years 2014–2018) were eligible for participation, a group of approximately 700 students. We e-mailed the student body during the spring of 2014 inviting them to participate in writing sessions. Because students’ initial response was low, we then invited individuals who had participated in past donor honor ceremonies (and thus showed an interest in reflective engagement with anatomy). These students were divided into three groups based on availability. We conducted a one-hour session with each group.

M.K. led the session; D.B. was present to take notes about the discussion. In each session, students were asked to read two short selections (referred to as 1 and 2 in the excerpts below) and then to write to prompts “in the shadow” of these pieces.

The first reading was from a transcript of an oral interview of a medical student from another institution who expressed ambivalence and uncertainty about the process of dissection. The prompt paired with this reading was taken from the film “Still Life: The Humanity of

Anatomy,” by Thomas R. Cole¹³: “What might you say to your donor if you could write to him or her today? What might he or she say to you?”

The second reading was a poem by Marilyn Krysl¹⁴ describing a clinician sitting with a patient at the moment of death. Students were then asked: “What have you become as a result of the lab? What have you left behind?”

For both prompts, participants were given three minutes to handwrite a response to the prompt, in the style of a narrative medicine workshop.¹⁵ The short time allotment for writing, common in narrative medicine workshops, often helps inexperienced writers to break through hesitations and blocks, freeing them to speak freely with the understanding that the final product does not have to be perfect.

Following each writing exercise, the group engaged in a discussion in which students were given the opportunity to read what they had written, and respond to each other in questions and comments.

Writing Analysis

M.K. deidentified and typed students’ responses, and created a binder for each of us containing the students’ responses, their general demographic characteristics, and our notes from discussions. Each of us read and re-read all student responses, using a narrative medicine reading guide¹⁶ as a starting point. Briefly, the guide prompts the reader to consider observation (i.e., signs of perceiving), perspective, form, voice, mood, and motion. We met as dyads and as a group repeatedly during this process, and returned to the reflections frequently to check our interpretations with textual evidence. There were no major points of disagreement, but each of us emphasized different elements of professional formation in our readings.

After this initial analysis and discussion, each of us composed short descriptive paragraphs summarizing key points from our readings and discussion. M.K. crystallized key points from descriptive paragraphs and sought input from academicians known for their work in professional formation and narrative medicine.

In our final analysis, the level of detail present in each piece emerged as a helpful organizing feature. Responses could be characterized as “matter-of-fact,” “introspective,” or “free/playful.” The matter-of-fact responses responded directly to the prompt and used a minimum of concrete descriptive or metaphorical imagery. The introspective responses had more details about the internal states that the dissection produced in the students. Although they were often similar in content to the matter-of-fact responses, they included more precise diction and often a sense of change over the course of the dissection process. The free/playful responses were more varied in their form and in the use of details and used vivid images to develop the theme over the course of the short prompt.

Our observations are organized around exemplar student pieces (one from each category) to showcase the range of complexity and detail. After each exemplar, we offer analytic commentary and reference other responses. Our analyses of each piece address content (first) and form (second).

Observations

The interpretive statements that follow came from the authors’ later review of the student writing (rather than from discussions that occurred in the writing groups). Seventeen students participated in the writing sessions and provided written reflections. Each group had more men than women (four males/two females, two males/one female, and five males/three females, respectively), and each included students from several different years in school and with stated interests in different specialties. Every student participated in the writing and the discussion. There was some variation in vocal contributions, but it appeared that each student felt comfortable to be an active participant.

The first exhibit is an example of the tier of “matter-of-fact,” direct responses to the prompts:

1. Dear _____,
It’s difficult to find the words to explain just how grateful I am that you donated the most personal possession you owned so that a stranger could learn a little bit more about what it means to be human.

It’s strange because in some ways I feel that I got to know your body better than you even did.
Please know that I always will remember, every time I see a patient and every time I look in the mirror.

2. Become: I have become a life-long appreciator of the human form, a new believer in the miracle of life. My curiosity has ignited, as well as the urge to inspire others.

Left behind: I can no longer be blissfully ignorant about the insides, I have seen & done too much. There has been too much sacrificed for me to give up.

Here we encounter two major themes: gratitude, and conceptualization of the body donation as a sacrifice. This student makes an ethical claim, expressing a duty to apply what was learned to future practice, echoed throughout the writings. She grounds her duty in sacrifice. (Although the word “sacrificed” seems to hearken back to the first half of the response, with its recollections of the donor’s gift of “the most personal possession,” it could also refer to the student’s own loss of ignorance/innocence in the second half.) Like many of the other entries, the donor’s personhood is separated from the body as “a possession.” The tone is supplicating and apologetic (“please know”), suggesting that the student is trying to justify what she has done. This sense of transgression is common among many of the pieces, with several including explicit apologies to the donors for the dissection process. Looking at the situations that precede the apology, we see evidence that often the apologetic stance has to do with a sense of impropriety at proceeding with the dissection without knowing what one was looking for.

This student writes in a somewhat rhythmic first person, rather than the less structured, conversational style adopted by many other students. Much language is invested here in explaining the process of writing (“It’s difficult to find the words to explain just how grateful I am ...”), which prevents the writer from delving deeper into the particularities of the experience. Significant nouns are often described loosely (“personal possession,” “little bit”) and feelings are prone to extremes (“I have become a life-long appreciator of the human form.”) This

stands in contrast to pieces with more reflective detail, such as the next exhibit.

1. I would thank her for her gift and ask her if she thought it was worth it. Did she provide the effect she was going for? I would like to think she would say yes, and tell me that, even though I’m not going to be a surgeon, that the knowledge I gained has helped me become a well-trained budding doctor. I think she would ask me to maintain compassion and remember the outcome that we all inevitably reach in death.

2. I think we quickly lose any sense of squeamishness or shyness when we go through anatomy lab. Sure, things are always different when it comes to a real patient, but once you’ve gone through and torn apart every little inch of someone, you sort of lose a layer, a bubble, that previously stood between you and other humans. Maybe as a trade-off, we gain the confidence we need, a sort of inherent x-ray vision, that allows us to see beneath the skin. Maybe it’s this 6th sense that helps with our diagnosing, but also being sensitive to the problems that lurk below.

This piece, in the “introspective” category, uses the metaphor of x-ray vision to exemplify a shift or transition from one way of knowing to another. This type of motion was present in several of the pieces. Here, the student’s capabilities are enhanced by a figurative new power of sight; for others, the shift was marked instead by narrating a shift from “seeing” to “feeling.” These writings express a shift from a concrete form of anatomical knowledge to a more fluid, dynamic, and clinical sense of reasoning. For these students and several others, “seeing” is a necessary bridge between ignorance and clinical facility—and it is viewed as the definitive way of gaining that knowledge. A different reflection included the observation, “Even when speaking to friends, they will ask me questions or describe the way their stomach, joints, and bones feel ... now I can visualize the pieces as they flow, about, and insert inside one another. I could see what they do, and so I am better able to feel it.”

A prime example of the pervasive mood of tentativeness (or perhaps discomfort, disquiet), Exhibit 2 consistently uses phrases like “I would like to think.” In the second section, the student moves from first person to the third person, indicative of distancing. This student also articulates a concept prevalent in the writings: the trade-

off, in which the loss to a certain sense of self that comes through the lab is balanced by learning. The change here is first described negatively—“losing” a layer. The positive gain, “confidence,” comes second.

Students in this introspective tier personalized their writing experience with a bit more detail and specificity. Their responses also expressed more ambivalence than those in the matter-of-fact category.

The third exemplar piece, which we categorized as free/playful, is different both stylistically and in its content.

1.
Me: just a heads up ... this isn't science. They tell you you are donating your body to science. I imagine that conjures images of test tubes and lab coats and future cures for disease that may help your grandchildren. This is not that. Science is discovering. It is new knowledge. It is progress. This is not science. This is evisceration by young doctors who don't know what they are looking for or how to look for it. This is the symbolic holdover of a profession that used to have to steal corpses by night because there was no other way. It doesn't have to be this way anymore.

2.
Maybe it made me more cynical.
Maybe it made me more distant.
Maybe it made me more human.

I'm not sure what I left in the anatomy lab. I left it behind me. I didn't go back to look.

This piece resists strict interpretation, leaving the door open to multiple analyses. All of our readings characterized this piece as combative, and that speaker is talking less to the donor than to the medical community. “They,” the medical community or “the system,” isn't defined. The entry stands out both for its self-awareness and for its open critique against medical education and tradition, against “a profession that used to have to steal corpses by night.” The speaker seems to revel in his rebellion—though the reasons for this rebellion are not clear (is it shame/guilt, anger, a general disposition to counter tradition, or something else?). It is also possible that this piece, though “free and playful,” also was written in anticipation of what students “should” produce for this kind of exercise: a reflective piece that will be seen as innovative and provocative. Terse, short sentences reproduce the tension that

we infer the student felt in the dissection process. The donor is silent, or not allowed to speak. Corresponding with the theme of an induced state of disquiet (i.e., being forced to deal with something strange and unfamiliar), it seems like the student demands to know why what would be strange to nonphysicians is not supposed to be strange to medical students.

Chronicity—a component of plot—provides much of the energy in the piece, first situating the practice of anatomy in a historical context, then appealing to a change of tradition, and a personal comment about putting the lab behind the writer, in the past. Despite the adamant stance of his first writing, the student seems tentative in the second piece, “Maybe ... maybe ... maybe ... I'm not sure.” But this student didn't seem to care to resolve the “maybes.” He has moved on.

Students who wrote such free/playful responses did not feel confined by voice or tone. They used visual language to express specific emotions. These students' liberty with convention in addition to their enriched language use served to form short narratives. These were several of the elements that made these pieces especially provocative, exemplifying Coulehan's¹⁰ challenge to “enter into a certain kind of narrative and make it one's own.” It should be noted, however, that countering the expected narrative is not the criterion for a “free/playful” response (though in our sample many fell into this category). A reflection can affirm the other values and still use strong, vivid language and a form that fits the reflection rather than mirroring the language of the prompts.

Reflection

Our evaluation of students' written reflections revealed a meaningful capacity for self-awareness (and other-awareness) as they form their identities as professionals in the context and culture of the anatomy lab. The written responses of students varied in complexity and detail, indicative of a range of competence with the narrative form. They also showed varied degrees of reflectiveness and mindfulness, habits consistent with traits of spiritual formation and ones that sustain humanism in practicing physicians.¹⁷

Most students emphasized gratitude and the worth of the gross anatomy experience, even when these responses

were embedded in complex narratives. One in particular addressed her cadaver about an impulse to hold her hand, “not knowing if I wanted to comfort you or if I wanted you to comfort me.” A few students had more strongly negative, almost rebellious responses to the practice of anatomy, as exemplified by the third free/playful response we analyzed. These responses all came out of one of the groups (the other two were notably positive about the anatomy experience). In the process of writing and sharing their thoughts, this group as a whole seemed to gravitate toward a more conflicted view of the course: so while individually each may have experienced an internal sense of ambiguity, as a group they recognized and validated the differing experiences of the others in the room.

There are a number of potential strategies for engaging students in reading and writing, and increasing the depth and complexity of their responses. First, one might deepen detail by highlighting a word, phrase, form, or concept from a student response and use it as a springboard to elicit deeper, more specific expression. Students who write matter-of-fact responses could be encouraged to use details to express what was, for instance, shocking or surprising about the dissections—and why this shock or surprise was relevant to, or inspired by, the donors' “sacrifice” or the students' new “perspective.” In our sessions such externalization of specific emotions or perceptions through writing was occasion for self-discovery.

Second, metaphors can serve as writing prompts: The student who evoked a “bubble” between herself and others could incite discussion or writing about other “bubbles” that exist within the health care environment, leading to discussion about clinical boundaries. Students might also be encouraged to recall other experiences in which boundaries or “bubbles” played an important role in interpersonal relationships. This has the effect of using writing skills (i.e., metaphor) to highlight juxtapositions that are relevant to clinical medicine. In this case, brushing with mortality in the lab may help to broaden students' sense of what Charon¹⁸ calls “awareness of our frailty,” and meditating on the trade-off of learning and the personal sacrifice of the donors may help

students find “respect for the courage of others.”¹⁸

A third strategy is to offer other readings, either in fiction, poetry, or theory. Interested students could be pointed to pieces that echo their sentiments or forms. For instance, one student who wrote using oceanic metaphors might be pointed to Donald Hall’s¹⁹ poem “The ship pounding,” recounting an experience in a hospital from a very different perspective but using a similar literary device. Students may also be encouraged to use the resources from their own cultural or spiritual traditions to understand their subjective responses to the lab, echoing Kinghorn and colleagues⁷ call for deepening the experience of professional formation by seriously engaging those lively, external traditions.

The approach used in this project is relevant to those who wish to find new ways to interpret reflective writing produced by students. They do not produce actionable data about how to sway opinions of the anatomy lab—indeed, in our analysis, we purposefully avoided this kind of thinking. Instead, we focused our attention on the writing itself, and the ways it illuminates the process of professional formation. This could enable educators to encounter students with a deeper sense of understanding, and to shed light on aspects of students’ experiences that the students are just beginning to articulate.

Final Thoughts

We acknowledge the limited scope of our pilot project. Though we had devoted involvement from all of our student participants, our project was a relatively simple exploration with a small group of students, already interested in the anatomy lab and reflective exercises, at one institution. The time between students’ actual experience in the anatomy lab and the writing sessions varied significantly among participants.

We acknowledge our diverse backgrounds and perspectives on professional formation in student responses. These differences seemed more salient than our shared experience with and training in narrative medicine. We also acknowledge that discussions in the writing groups, which followed the reading and writing, seemed

important to students but were not included in the analysis. For example, several students were surprised at the insights that they produced in the fast writing prompts (e.g., one discovered a new metaphor for his experience in gross anatomy and entering residency). In the future, there may be a role for a project that juxtaposes data from discussions and written reflections to determine similarities and differences. Ideally, such a project would involve follow-up sessions to allow students to reflect on the process of reading and writing, to allow educators to check back in with students to verify understanding, and to allow students to participate in the interpretive work. Although the strategies we suggested seem to have broad applicability, we cannot comment on their effectiveness.

Our project illuminates some of the complexity of students’ experience of learning anatomy through dissection, and shows how reading and interpretive techniques grounded in narrative medicine can shed light on professional formation in medical school. The body of writings generated by our participating students could spark far more interpretations than we produced in our limited process. However, through both content and form, these writings gave a glimpse into the tensions, disappointments, and satisfactions of the practice of gross anatomy. This type of reflective exercise and analysis could be a part of a broader goal of forming narrative-minded professionals, who become increasingly self-aware (and more able to express this awareness with precision) as they progress in their education.

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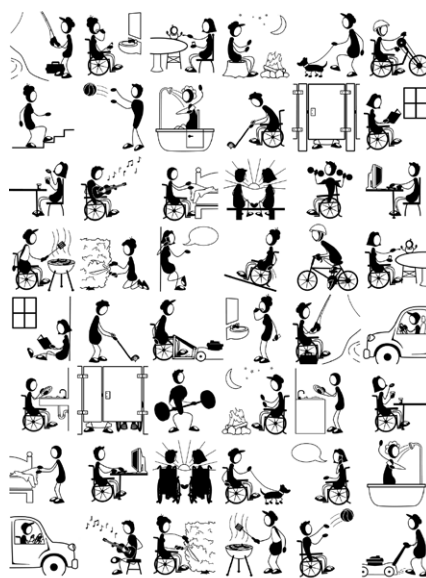
Cover Art

Artists' Statement: ADLs—Activities of “Disabled” Living

Preclinical medical students are introduced to illness 8.5 by 11 inches at a time. From thousands of PowerPoint slides, we learn about aberrant biochemical pathways, mechanisms of pathogenesis, and lists of treatment options. From textbook pages filled with classic physical exam findings sensationalized by images of the infirm, we cannot help but imagine that sickness invariably leaves its victims disfigured, disabled, and depressed. Furthermore, the preclinical curriculum compounds this problem—too often, the human impact of sickness takes a backseat to testable, sterile facts and the vocabulary of medicine.

For more than a decade, the University of Michigan Medical School’s Family Centered Experience (FCE) program has sought to correct this. Through the FCE program, first- and second-year medical students are taught to appreciate the human impact of disease by learning directly from patients with chronic illness and their families. During home visits, we saw families struggle with severe chronic back pain, recount the trauma of a loved one’s heart attack, and confront the fear of relapse. At the same time, however, we saw these families prepare dinner, care for pets, and raise children. We came to appreciate illness as a terrible, yet often manageable burden. While our FCE families did struggle, oftentimes profoundly, from the consequences of their illnesses, their diagnoses ultimately led to adaptation and perseverance rather than submission and resignation. Their resilience inspired us and prompted us to share their successes.

Our work, *ADLs—Activities of “Disabled” Living*, explores and refines the viewer’s attitudes about disability and functionality. Here we employ the classic style of the “Penmen” posters, wherein we invite the viewer to identify



FIND THE TWO IDENTICAL
ACTIVITIES OF
DAILY LIVING
ADLs—Activities of “Disabled” Living

two identical figures among many variations. Despite this invitation, the viewer searching for a matching pair will soon become frustrated as no two images are the same—in form. Instead, the viewer notices that each image has a sister in which the theme of every action is identical, except that in the complement image the participant is wheelchair bound. In that moment, the message of the work becomes clear: Through accommodation and perseverance, those suffering chronic illness may participate in daily living on equal grounds with those without such a diagnosis. It is only our bias that leads us to believe otherwise, and the greater a viewer’s bias, the more delayed—and more poignant—the message becomes.

As a whole, *ADLs—Activities of “Disabled” Living* celebrates the resilience of the physically or mentally disabled

by depicting their ability to adapt and, in some cases, acquire optimal functioning in tasks related to activities of daily living (ADLs). We chose to invoke the term *ADLs* because of its medical and legal relevance when deciding whether or not an individual will be classified as disabled.^{1,2} Because of the wheelchair’s cultural association with disability, it is used repeatedly in our piece to symbolize all conditions that affect ADLs.

We hope to encourage patients newly diagnosed with a physical or cognitive impairment, and that these depictions of adaptability will provide both them and their caregivers renewed hope about the capacities of the disabled to live active, independent lives.

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